Wellis®

CityLine

USER MANUAL

PALERMO
SPA SYSTEM

- 2x3HP Hydromassage pumps or
  2x2HP and 1x3HP Hydromassage pumps
- Energy-efficient LAING circulation pump
- 30 or 37 or 57 jets
- Hot air blower pump in DELUXE modell
- Ozone generator
- New GS100/VL260 control system in START modell
- Aromatherapy in DELUXE modell

START

STANDARD

DELUXE

Version: 01.2014

Standard Specification

	Start ☐	Standard ☐	Deluxe ☐
Dimensions	2180 x 2180 x 910 mm	2180 x 2180 x 910 mm	2180 x 2180 x 910 mm
Shell material	PU reinforced Sterling Silver outdoor acrylic (6,3 mm)	PU reinforced Sterling Silver outdoor acrylic (6,3 mm)	PU reinforced outdoor acrylic in optional color (6,3 mm)
Sitting places	3 persons	3 persons	3 persons
Reclining places	2 persons	2 persons	2 persons
Water volume	1315 l	1315 l	1315 l
Net weight	300 kg	320 kg	350 kg
Total number of jets	30	37	57
Air jets	-	-	10 pcs
Power requirement	1 Phase, 1x25A (230V) optimum; 1 Phase, 1x16A (230V) minimum	1 Phase, 1x25A (230V) optimum; 1 Phase, 1x16A (230V) minimum	3 Phase, 3x16A (400V) optimum; 1 Phase, 1x32A (230V) minimum
Hydromassage pump	1x2 speed, 3 HP	2x2 HP	2x3 HP
Hot air blower			1 x 300W (230V/50Hz)
Circulation	By hydromassage pump	Energy-efficient LAING circulation pump (110W/h)	Energy-efficient LAING circulation pump (110W/h)
Filter system	1 pcs	1 pcs	1 pcs
Control system	Balboa GS100 / VL260	Balboa BP600 / TP 600	Balboa BP2100 / TP800
Chromotherapy lighting	1 lamp with 55 LEDs	-	1 lamp with 55 LEDs
Heating unit	1 pc 3kW	1 pc 3kW	1 pc 3kW
1,5” drain	1 pc	1 pc	1 pc
Headrest	3 pcs	3 pcs	3 pcs
Thermo cover	1 pc	1 pc	1 pc
Aromatic therapy	-	-	1 pc
Ozone generator	-	1 pc	1 pc
Exklusive Chromotherapie Lighting	-	16 x 1 LED	16 x 1 LED
Frame	surface-treated wood	surface-treated wood	WPC
Diverter	1 pc	1 pc	1 pc
Maintenance-free Synthetic Cabinet	1 set (only light grey colour)	1 set (only light grey colour)	1 set (in optional color)

WARRANTY LETTER

Serial number:……

Model:……

Distributor	*Retailer*
Date of buying: _____	Date of buying: _____
Signature: (stamp)	Signature: (stamp)

2014 Wellis Spa Limited Warranty

WARRANTY FOR EXPORT

Warranty; Limitations of Liability and Damages.

Company offers a limited warranty comprised of replacement of faulty parts and offers no reimbursement for labor of repairs outside any abnormal failure rates to be determined by both parties.

5 year on spa shell: Wellis warrants the structure of the Pool Shell against defects in workmanship and material for a period of 5 years, subject to the limitations and conditions listed in this Warranty.

3 years on spa shell surface: The acrylic spa shell is warranted against cracking, blistering or delaminating due to defects in materials or workmanship for three years from the original date of delivery.

2 years on spa plumbing: Spa fittings and plumbing are warranted against leaks due to defects in materials or workmanship for two years from the original date of delivery. There is no labor coverage on internal jet parts replacement, cleaning or adjusting.

2 years on standard and optional spa equipment – Balboa Control Systems, Jet Pump(s), Laing Circulation Pump, Heater, WiFi modul, IR receiver: The spa equipment systems are warranted against failure due to defects in materials or workmanship for two years from the date of delivery. Fuses, bulbs, and seals are not covered.

2 year on Pulsar hydrotherapy system: The factory installed Pulsal hydrotherapy systems are warranted against failure due to defects in materials or workmanship for one year from the original date of delivery.

2 year on spa cabinets/skirts: The factory installed spa cabinets/skirts are warranted against failure due to defects in materials or workmanship for one year from the original date of delivery.

2 year on ozone generator: The ozone generator is warranted against failure due to defects in materials or workmanship for one year from the original date of delivery.

2 year on audio system components: The factory installed audio components (i.e. power supply, speakers, wires, etc.) are warranted against failure due to defects in materials or workmanship for one year from the original date of delivery. There is no in-field labor service on these items.

2 year on LED lights: The factory installed LED lights are warranted against failure due to defects in materials or workmanship for one year from the original date of delivery.

2 year on UV-C sanitizer lamp: The factory installed UV-C sanitizer lamps are warranted against failure due to defects in materials or workmanship for one year from the original date of delivery.

2 year on ISIS Genesis disinfection system: The factory installed ISIS Genesis disinfection systems are warranted against failure due to defects in materials or workmanship for one year from the original date of delivery.

1 year on blower: The blower is warranted against failure due to defects in materials or workmanship for one year from the original date of delivery.

1 year on thermo cover: The thermo cover is warranted against failure due to defects in materials or workmanship for one year from the original date of delivery.

1 year on Wellis Spa Umbrella: The factory installed Wellis Spa Umbrellas are warranted against failure due to defects in materials or workmanship for one year from the original date of delivery.

1 year on LCD TV system: The factory installed LCD TV systems are warranted against failure due to defects in materials or workmanship for one year from the original date of delivery.

90 days on skimmer house: Skimmer houses are subject to water chemistry variation and are warranted for ninety days from the original date of delivery. **NO warranty** on filters, spa pillows and skimmer house tops.

WARRANTY PERFORMANCE

1. This warranty does not cover cleaning or adjusting spa or for customer error in following correct procedures.

2. Wellis Magyarország Kft. reserves the right to substitute a spa or component of equivalent value, either new or factory reconditioned and any such repair or replacement shall assume as its warranty only the remaining portion of the warranty on the original product.

3. Wellis Magyarország Kft. is not liable for any costs associated with in-ground, in-deck, or in-home installations or removal. Costs associated with installations other than standard residential portable spa use will be the sole responsibility of the spa owner. The spa owner is responsible for any freight and/or delivery and set up charges for a replacement spa.

4. The radio reception is not covered under warranty due to the following: The radio signal reception may be impaired by the positioning of the spa next to or near structures, high power lines, main power lines or metallic towers. The signal reception may be impaired if the spa is located near hills or it is in a valley or simply outside the broadcasting range of the radio stations. The position of the spa and radio may be “out of phase with the bandwidth” or the radio frequency. External signal reception assistance may be required and is not part of this warranty.

5. Wellis Magyarország Kft. shall not be liable for any incidental or consequential damages for breach of any expressed or implied warranty, breach of contract, negligence, strict liability, or any other legal theory related to this product. All consequential expenses including loss of use, damages, or contingent liabilities arising out of any alleged deficiencies of the spa are specifically excluded from this warranty.

6. Warranty coverage is only extended to the original buyer. Spas purchased from anyone other than a current Wellis Spas Authorized Dealer are specifically excluded from any warranty coverage. To obtain warranty service, please notify your Wellis Spas Authorized Dealer in writing within 14 days of the problem (with problem details, original proof of purchase).

7. The Authorized Dealer will repair or replace any component found defective under the terms of this warranty – and permitted by Wellis Magyarország Kft. Travelling expenses may apply outside of every European cities.

8. If the Authorized Dealer doesn`t supply the customer with proper service, please notify Wellis Magyarország Kft. by mail within 10 days of the problem.

9. Electrical connection: All electrical connections are required to be done by a qualified electrician solely. The spa has to be connected to separate current circuit equipped with suitable power switch and life safety relay. Omission of these electrical conditions/requirements entails immediate loss of the warranty.

10. Water connection: All water connections are required to be done by a qualified plumber solely. If the spa is placed indoor make allowances for the following special requirements: The water accumulates around the spa so the socket cover has to be in possession of a suitable drainage. This arrangement hinders the water in collecting.

11. Wellis Magyarország Kft. offers a limited warranty as described in the Warranty Letter.

12. Warranty claim is enforceable with this warrant letter. Irregular establishing of this warrant letter doesn`t affect to the validity of warranty obligation. If customer doesn`t get this warrant letter from the Authorized Dealer, it doesn`t affect to the validity of warranty obligation.

SPA WARRANTY COVERAGE WILL BE VOID UNDER THE FOLLOWING CONDITIONS

1. If damages caused by inefficient maintance of water and/or chemical dosage.
   Terms of water hardness (limits): between 6-10 German degrees.

2. If the spa surface or equipment has been damaged or discolored as a result of improper water chemistry maintenance, including sanitizers such as trichlor type chlorine, calcium hypochlorite, sodium hypochlorite, and any other chemicals or a chemical dispenser that may rest on the spa surface. Some household cleaners can damage the spa shell or equipment and will void this warranty completely. Use only products that are recommended for spas.

3. If damage to the spa has resulted from an Act of God, force majeure, moving of the spa, improper installation, unstable power conditions, customer negligence, customer abuse, weather and sunlight damage or damage caused in shipment.

4. If damage to the spa has resulted from operation outside – temperature exceed 45°C.

5. If the spa has been subjected to any alterations, after-market product installations, misuses, abuses, or if any repairs are attempted by anyone other than its authorised dealers.

6. If damage to the spa has resulted from improper use of thermo cover.

7. If damage to the spa has resulted from clogged, dirty and/or sclerosed filter. The spa warranty will be void if the owner does not follow all the instructions in the owners manual regarding the proper use and care of the spa. Warranty doesn`t apply to filters!

8. If damage to the spa has resulted from improper electrical installation, voltage drop, peak voltage and/or operation is outside the pale of + / - 10% voltage range.
   Electrical conditions:

   For electrical installation it is required to build a 30mA circuit breaker (life safety relay), which is just connected to the spa (not allowed to connect any other devices). This 30 mA circuit breaker is not permitted to be installed in the same place as the spa.
   Required to install IEC, RCCB system in spa`s common surroundings.
   Length of cable is 3 meters at the place of spa installed.
   It is obligatory to observe all information, details and requirements which are in the product`s installation diagram regarding elelectricity demand and drain installation.
   These information can be found in the user manual, or able to download from www.wellis.eu. If you didn`t get the document from your dealer, please contact export@wellis.eu.

9. If damage to the spa has resulted from debris in jets (i.e. sand, dirty calcium, leaves etc.).

10. Warranty doesn`t extend to the waste water manifold (drain hose), pillows, filters, bulbs and/or pump sealings.

LIMITATIONS

The Warranty expressions specified excludes any other implied or oral undertakings. Purchasers also have current rights under statute which will be respected by Wellis Magyarország Kft. After a period of 12 months, for the purpose of assessing Wellis Magyarország Kft. liability, all aspects covered by this Warranty will be treated on a pro-rata basis. Wellis Magyarország Kft. or its agents will not be liable for any incidental or consequential loss or injury. Nor will Wellis Magyarország Kft.be liable for costs associated with but not limited to building alterations or finishes and under no circumstances will be liable for greater expense than the amount paid for the product.

THE SPA OWNER MUST DO EVERYTHING STATED IN THE SPA OWNERS MANUAL AND WARRANTY LETTER TO SAFEGUARD AND MAINTAIN THE SPA!

MANUFACTURER OF YOUR SPA:
Wellis Magyarország Kft.

Registered: ..... 1118 Budapest, Budaörsi út 31/c, Hungary;

Central premise:.....2371 Dabas, Mánteleki út hrsz: 0417 Pf: 7, Hungary

AUTHORIZED DEALER OF YOUR SPA
Company in charge of your spa

Company name: .....

Registered: .....

Central premise:.....

Place of complaint:.....

E-mail address:.....

Website: .....

Phone number:.....

Fax:.....

Person in charge of installation:.....

Date of installation: .....

SERVICE-WORK

The announcement date of damage: _____
Date of received goods/parts for repair: _____
Date of the return of repaired goods/parts: _____
Date of site service: _____
Improved error: _____
Mode of repair: _____
Failed component: _____
New deadline for the warranty: _____

A

STAMP

The announcement date of damage: _____
Date of received goods/parts for repair: _____
Date of the return of repaired goods/parts: _____
Date of site service: _____
Improved error: _____
Mode of repair: _____
Failed component: _____
New deadline for the warranty: _____

B

STAMP

The announcement date of damage: _____
Date of received goods/parts for repair: _____
Date of the return of repaired goods/parts: _____
Date of site service: _____
Improved error: _____
Mode of repair: _____
Failed component: _____
New deadline for the warranty: _____

C

STAMP

The announcement date of damage: _____
Date of received goods/parts for repair: _____
Date of the return of repaired goods/parts: _____
Date of site service: _____
Improved error: _____
Mode of repair: _____
Failed component: _____
New deadline for the warranty: _____

D

STAMP

SAFETY INSTRUCTIONS

ATTENTION: PLEASE READ CAREFULLY AND FOLLOW THE INSTRUCTIONS

AVOIDING THE RISK TO CHILDREN

1. In order to reduce the risk of injury to children, do not allow children to use this spa alone unless they are carefully supervised at all the times.
2. In order to reducing the risk of injury to children, lower water temperatures are recommended for young children. Please test the water temperature with your hands before allowing children to enter into the spa, and make sure It Is comfortable for children's usage.
3. Remember that wet surfaces can be slippery, please reminding children to be careful enough when entering or exiting the spa.
4. Don't permit children to climb onto the spa cover.

AVOIDING THE RISK TO ADULT

1. In order to reducing the risk of injury to persons, do not remove or lost any suction fittings Never operate spa if the suction fitting are broken or missing.
2. Remember that wet surfaces can be very slippery. Take care of a danger of slipping and falling when entering or exiting the spa.
3. For the sake of health, people with infectious diseases should not be allowed to use the spa.
4. Keep any loose articles of clothing or hanging jewelry away from rotating jets or other moving components.
5. The use of drugs, alcohol or medicine before or during spa use may lead to uncon sciousness with the possibility of drowning. Persons using medicines should consult a physician before using spa; some medicine may cause a user to become drowsy. While other medicine may affect heart, blood pressure and circulation.
6. Pregnant women should consult a physician before using the spa.

AVOIDING THE RISK OF ELECTROCUTION

1. Test the ground fault circuit interrupters before use. Must always to be connected to a circuit protected by a ground fault interrupt.
2. Must not bury the power cord, a buried power cord may result in death, or serious personal injury due to electrocution. Replace a damaged cord immediately.

3 Do not permit any electrical appliances, such as a light, telephone, radio, or television within 1.5m of a spa. Failure to maintain a safe distance may result in death, or serious pers on injury due to electrocuting if the appliance should fall into the spa

4 Install your spa in such a way that drainage is away from the electrical compartment and from all electrical components.

5 Disconnect the spa from the power supply before servicing the electrical components.

NOTICE:

Your spa is a equipment with two/three massage pumps that allow you to operate each half of the jet system separately or both valves simultaneously. Do not connect power to an empty spa. Otherwise the components such as controller, heater, circulation pump, and other systems could be damaged.

INSTALLATION INSTRUCTIONS

SITE PREPARATION

1.INDOOR/BASEMENT INSTALLATION

If you place your spa indoors, be aware of some special requirements. Water will accumulate around the spa, so flooring materials must provide a good grip when wet proper drainage is essential to prevent a build-up of water around the spa. When building a new room for the spa it is recommended that a floor drain is installed. The humidity will naturally increase with the spa installed water may get into woodwork and produce dry rot ,mildew or other
problems check for airborne moisture's effects on exposed wood ,paper ,etc in the room .To minimize these effects, it is best to provide plenty of ventilation to the spa area .

2.OUTDOOR AND PATIO INSTALLATION

It is important that you have solid foundation to support the new spa when you install it ,To be certain your deck or foundation can support your spa .you must know the deck's maximum load capacity Consult a qualified building contractor or

structural engineer. To find the weight of your spa. its contents and occupants , please refer to the spa specification chart . This weight per square foot must not exceed the structure's rated capacity; otherwise serious structural damages could result . If you install the spa outdoors ,we recommend a reinforced concrete pad at least four inches thick .Don't forget to install some floor drains around your spa so that it can take the water away during and after the heavy rain.

INSTALLATION

1.Please read and study the OWNER'S MANUAL carefully, if possible, please find the professional people to install and setup for first time .

2.Remove the package, and takes down the new spa on the prepared foundation.

3.Open the computer control box compartment under the computer display by loosen the screw and then open the compute box, prepare the accordingly cooper cable (the length will be enough to connect to the family power supply), with electrical plug one side, and another side without plug and then take the empty side of cable from electrical cable, channel to go through the pump compartment to the channel of control box compartment ,connect it to control box according to the following illustration:

4.Clean and wax your spa shell and cover your spa has been thoroughly tested during the manufacturing process to ensure reliability. So there's a small amount of water even within some grease may have remained in the plumbing after testing, as a result, ay have spotted the spa shell or the spa shell or the spa siding prior the delivery so before filling spa , it is a need to put some new water to wash it and then wipe the spa shell clean with a soft rage, or some acrylic cleaner and wax it if possible.

OPERATING INSTRUCTIONS

1. Close the drain and fill the spa with water

After closing the drain, put your garden hose inside the tub and turn your water on to fill the spa, and the water level should be maintained approximately 1 above the top of the highest jet keep an eye on everything as filling. If you see any leak(or flood) anywhere, turn off the water until it will be fixed.

2. Power up your spa

First check the main house CIRCUIT BREADER that controls the electric to the spa are functioning properly, connect spa plug to the power supply.

3. Trail open and test

Your controller with a factory`s first setup already, push the button of PUMP and AIR BLOWER to make jets run for some minutes to check the operation of the jet system and purge any remaining air from the heating system, once the jet system fully operational, priming of the spa is complete. Check and make sure the air controller and jets are open. Another possible main problem is AIR LOCK, which can cause the jets to appear not work well or at all. It is happened that when you are filling the spa up fairly rapidly, air can get trapped in the pipes that go to the suction fittings and the jets. The water level rises up past the openings in the spa. The air becomes locked in the pipes, and then when you go to start the spa pump, it tries to suck in water, but only air is in the pipes. The pump cannot prime itself at that point, so it just runs, but does not pump any water. Open the door of pump compartment, loosen the quick disconnect fitting in front of the pump a little, let some air get in and will break the air lock that has developed, and then see some water start to come out, re-tighten the fitting, turn the pump on, it will surge for a few seconds and then start to pump properly. If it still does not work. Please contact a local spa professional to check it for you.

CLEANING

GENERAL INFORMATION:

Water recirculation-filtering

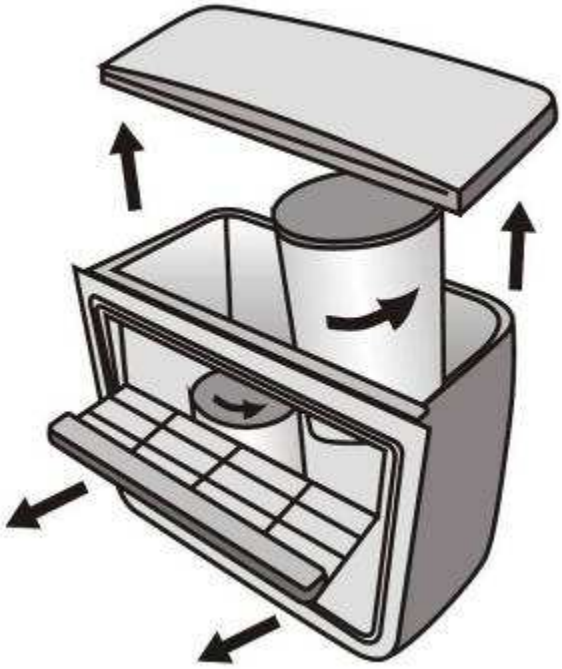
The basic conditions for keeping the water of the massage basin clean are the removal of mechanical dirt and the blending of the chemicals in the water with continuous water recirculation. In all our basins appliances comprising of a pump and a filter are used for this purpose. The filter removes the dirt floating in the water or at the surface of the water. Filters with paper or textile filter medium are used for the basins. The dirt settled at the bottom of the basin is filtered out with the aid of the suction and stirring created by the massage pumps.
Don't leave the spa expose to the sun without water or the cover, Exposure to direct sunlight can cause solar distress of the shell material. Use and cover spa cover when spa is not in use, whether it is empty or full. Try to deep your spa away form rain, snow, if possible build a gazebo for your spa.

1. Don't attempt to open the electrical control box . There are no user serviceable parts inside.
2. Drain, clean and refill your spa with fresh water on a regular schedule.
3. Clean the filter cartridge at least once per month.
4. Have spa users bathe before entering the spa water, showering without soap prior to enter the spa, and using only the rinse cycle when laundering your bathing suit, will help avoiding detergent and soap residue in spa water.

FILTER CARTRIDGE RMOVAL AND CLEANING

You spa filter cartridge can become clogged with mineral particles of calcification from hard water. Which may result in reduced water flow. We recommended cleaning you filter cartridge every month.

1.Remove filter lid.
2.Unscrew filter cartridge.
3.Clean with high pressure nozzle to remove all debris clinging to the filter.
4.Soak filter in warm water and Wellis Alga-Sokk to remove all body oils and grime. **Never use chlorine to clean the filter!** If you use textile filter, you can wash it int he washing machine too.



The chemical equilibrium of the water

The water of the whirlpool will be clean and clear if its chemical components are in equilibrium.

1. pH-values:

The first important indicator is the pH value of the water. pH is measured in a scale between 0-14 where 7 is the neutral value. Below this level the water is acid, above it alkaline. The pH value of the human eye is around 7.5, below 7.2 and above 7.8 the water will sting the eyes of the bather. Experiences have shown that most problems are caused by a too high pH value. An improper value reduces the effect of the disinfectant.

2. Water hardness:

Water hardness is determined by the quantity of calcium and magnesium salts dissolved in the water. Hard waters contain too much of these dissolved salts and thus, left alone, scale will form. Scales can cause significant damage both to the walls of the basin, to the piping, filter and to the heating and engineering units. In Hungary waters are medium hard. Water hardness cannot be reduced by the addition of chemicals, but the formation of scales can be prevented.

3. Disinfection:

Disinfectant: is the chemical that eliminates or neutralises the microorganisms (bacteria, algae, fungi, viruses) present in the water. Microorganisms are small, microscopic organisms, which cannot be detected with the naked eye and are continuously getting into the water through rain, wind and the body of the bathers. If they are not eliminated they pass from one person to the other through the water (and may cause sickness, infection). Organic matter turns the water of the basin opaque and cloudy. Most often – as we are dealing with warm water basins – bromine or active oxygen is used.

4. Frothing:

Froth is the smaller-bigger agglomeration of the bubbles and colloid contaminants found on the surface of the water. It is mostly caused by the mixing of the dirt, cosmetics, body care lotions, etc. that soak out of the human skin and the chemicals. It endangers the conservation of the aesthetic appearance and cleanliness of the water.

5. Water analysers:

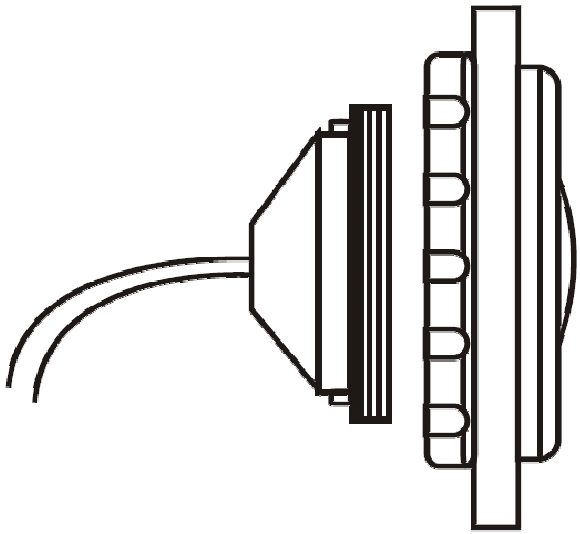
There are several different types of water analysers, which are mostly used to measure chemical and disinfectant effect. Chemical (pH); Disinfectant (Br, O_3)

Types:

- Box containing tablets and graduated measuring glass.
- Litmus paper indicators in a box.

Replacing underwater light

1. Turn off thepower on the spa.
2. Remove plastic panel behind where the underwater light is situated.
3. There is a plug with two wires going into the back of the light.
4. Remove this plug by turning anticlockwise.
5. Replace faulty light globe with a new one.
6. Replace parts and put the plastic panel back on.



TROUBLESHOOTING

Problem	Probable causes	solutions
Cloudy Water	Dirty filters Improper sanitization Suspended particles /organic matter Overused or water	Clean filters Shock spa with sanitizer Add sanitizer Adjust PH and/ or alkalinity to recommended range Run jet pump(s) and clean filters Drain and refill the spa
Water Odor	Excessive organics in water Improper sanitization Low PH	Shock spa with sanitizer Add sanitizer Adjust PH refill the spa
Chlorine Odor	Chloramines level too high low PH	Shock spa with sanitizer Adjust PH to recommended range
Musty Odor	Bacteria or algae growth	Shock spa with sanitizer id problem is visible or persistent drain, clean and refill the spa
Organic buildup/scum ring around spa	Build-up of oils and dirt	Wipe off scum with clean rag-if severe. Drain the spa. Use a spa surface and the cleaner to remove the scum, and refill the spa
Algae Growth	High PH Low sanitizer level	Shock spa with sanitizer and adjust PH Shock spa with sanitizer and maintain sanitizer level
Eye limitation	Low PH Low sanitizer level	Ajust PH Shock spa with sanitizer and maintain sanitizer level
Skin imitation/Rash	Unsanitary water Free chlorine level above 5ppm	Shock spa with sanitizer and maintain sanitizer level Allow free chlorine level to drop below 5ppm before spa use
Stains	Total alkalinity and/ or PH too low high iron or copper in source water	Adjust total alkalinity and/or PH Use a metal deposit inhibitor
Scale	High calcium content in water-total alkalinity and PH too high	Adjust total alkalinity and PH--if scale requires removal drain the spa scrub off the scale, refill the spa and balance the water

Problem	Probable causes	Solutions
Entire spa is inoperative	Power failure GFCI tripped heater high-limit thermostat tripped	Check power source Reset GFCL, call for service if will not reset Disconnect power for at least thirty seconds to reset heater high limit. If it will not reset check for clogged filters. If tripping continues, call for service.
Spa does not heat jets and light operate(Ready, and power indicators are power indicators are blinking)	Integrated pressure switch open Circulation pump thermal cut-off tripped	Check for cartridge filters. Integrated pressure switch will reset when the flow of water through the heater has been restored Call for service if the heater trips frequently. Check for cartridge filters or are looks in plumbing Disconnected power to the spa, allow circulation pump to cool Circulation pump thermal cut off will reset when pump has cooled and power is reapplied. Call for service if circulation pump thermal cut-off trips frequently.
Jets weak or surging	Spa water level too low Filters clogged Air Control closed Jet closed	Add water Clean filters Open Air Controller Open the jet by adjust face of it
Light inoperative	Light wiring or assembly is faulty	Replace light assembly
Power indicator blinking (Enter spa inoperative)	Heater high-limit thermostat tripped	Disconnect power for at least thirty seconds to reset heater high limit. If it will not reset. Check for clogged filters if tripping continues, call for service.
Ready indicator blinking	Temperature sensor problem	Disconnect power for at feast thirty seconds if blinking continues, call for service.

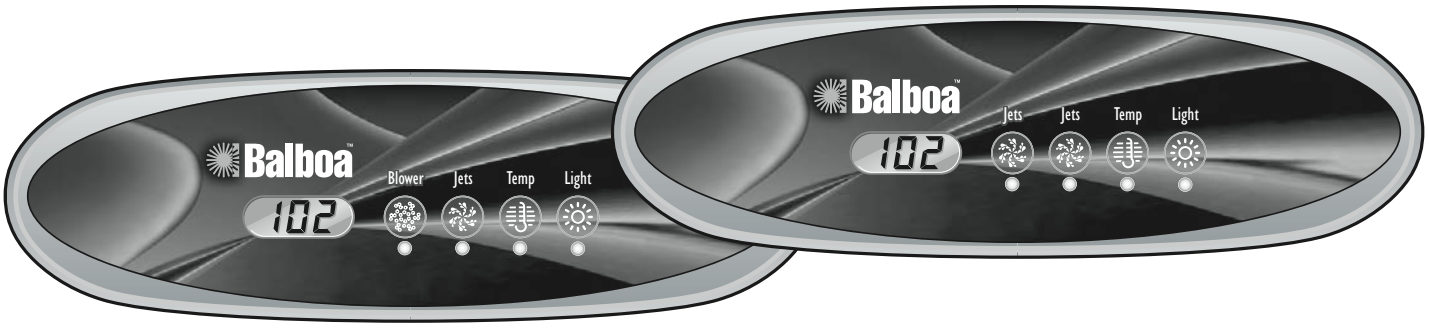
Palermo Start Spa system

MVP260 Control Reference Card

Non-Circ Operation

Initial Start-up

When your spa is first actuated, it will go into Priming mode, indicated by "Pr." **Please see the M-7 Installation Instruction Manual for complete instructions on Power-up and Pump Priming.** The Priming mode will last for less than 5 minutes (press "Temp" or "Set" to skip Priming Mode) and then the spa will begin to heat the spa and maintain the water temperature in the Standard mode.



Temp/Set (80°F - 104°F / 26°C - 40°C)

The start-up temperature is set at 100F°/37°C. The last measured temperature is constantly displayed on the LCD.

Note that the last measured spa temperature displayed is current only when the pump has been running for at least 2 minutes.

To display the set temperature, press the "Temp" or "Set" pad once.

To change the set temperature, press the pad a second time before the LCD stops flashing. Each press of the "Temp" or "Set" pad will continue to either raise or lower the set temperature.

If the opposite direction is desired, release the pad and let the display revert to the current water temperature. Press the pad to display the set temperature, and again to make the temperature change in the desired direction.

After three seconds, the LCD will stop flashing and display the current spa temperature.

Note: If there is not a blower on the system, an alternate panel with separate "Up" and "Down" buttons in place of a "Set" or "Temp" button may be used. Simply press "Up" or "Down" where a "Temp" or "Set" button press is indicated. (Ignore the "direction reversal paragraph.")

Jets

Touch the "Jets" button once to activate the low speed of the pump and again for the high speed. Press the "Jets" button again to turn off the pump. If left running, the low speed of the pump will automatically turn off after 4 hours, and the high speed will automatically turn off after 15 minutes. The low speed of the pump runs when when the blower is on. It may also activate for at least 2 minutes every 30 minutes to detect the spa temperature and then to heat to the set temperature if needed, depending upon mode. When the low speed turns on automatically, it cannot be deactivated from the panel; however, the high speed may be started.

Blower (optional)

This button is used to turn the blower on and off. If left on, the blower automatically turns off after 15 minutes.

Jets 2 (optional)

If your system has a pump 2 installed instead of a blower, it behaves exactly like a blower would.

Light

Press the "Light" button to turn the light on and off. If left on, the light automatically turns off after 4 hours.

Mode

Mode is changed by pressing the "Temp" or "Set" button, then pressing the "Light" button.

Standard Mode is programmed to maintain the desired temperature. Note that the last measured spa temperature displayed is current only when the pump has been running for at least 2 minutes. "St" will be displayed momentarily when you switch into Standard Mode.

Economy Mode heats the spa to the set temperature only during filter cycles. "Ec" will display solid when temperature is not current, and will alternate with temperature when temperature is current.

Sleep Mode heats the spa to within 20°F/10°C of the set temperature only during filter cycles. "SL" will display solid when temperature is not current, and will alternate with temperature when temperature is current.

Preset Filter Cycles

The first filter cycle begins 6 minutes after the spa is energized. The second filter cycle begins 12 hours later. Filter duration is programmable for 2, 4, 6, 8 hours or for continuous filtration (indicated by "FC"). The default filter time is 2 hours.
To program, press "Temp" or "Set," then "Jets." Press "Temp" or "Set" to adjust. Press "Jets" to exit programming.

The blower purges for 30 seconds at the beginning of each filter cycle. The low speed of the pump runs during filtration and the ozone generator (if installed) will be enabled.

Freeze Protection

If the temperature sensors detect a drop to below 44°F/6.7°C within the heater, the pump and blower will automatically activate to provide freeze protection. The equipment stays on until 4 minutes after the sensors detect that the spa temperature has risen to 45°F/7.2°C or higher. In colder climates, an optional additional freeze sensor may be added to protect against freeze conditions that may not be sensed by the standard sensors. Aux freeze sensor protection acts similarly except with the temperature thresholds determined by the switch and without a 4-minute delay in turnoff. See your dealer for details.

(over)

Diagnostic Messages

Message	Meaning	Action Required
	No message on display. Power has been cut off to the spa.	The control panel will be disabled until power returns. Spa settings will be preserved until next power up.
--	Temperature unknown.	After the pump has been running for 2 minutes, the temperature will be displayed.
HH	"Overheat" - The spa has shut down. One of the sensors has detected 118°F/48°C at the heater.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. Once the heater has cooled, reset by pushing any button. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
OH	"Overheat" - The spa has shut down. One of the sensors has detected that the spa water is 110°F/43°C.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. At 107°F/42°C, the spa should automatically reset. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
IC	"Ice" - Potential freeze condition detected.	No action required. The pump and blower will automatically activate regardless of spa status.
SA	Spa is shut down. The sensor that is plugged into the Sensor "A" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat situation and disappear when the heater cools.)
Sb	Spa is shut down. The sensor that is plugged into the Sensor "B" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat situation and disappear when the heater cools.)
Sn	Sensors are out of balance. If alternating with spa temperature, it may just be a temporary condition. If flashing by itself, spa is shut down.	If the problem persists, contact your dealer or service organization.
HL	A significant difference between temperature sensors has been detected. This could indicate a flow problem.	Check water level in spa. Refill if necessary. If the water level is okay, make sure the pumps have been primed. If problem persists, contact your dealer or service organization.
LF	Persistent low flow problems. (Displays on the fifth occurrence of "HL" message within 24 hours.) Heater is shut down, but other spa functions continue to run normally.	Follow action required for "HL" message. Heating capability of the spa will not reset automatically; you may press any button to reset.
dr	Possible inadequate water, poor flow, or air bubbles in detected in the heater. Spa is shut down for 15 minutes.	Check water level in spa. Refill if necessary. If water level is okay, make sure the pumps have been primed. Press any button to reset, or this message will automatically reset within 15 minutes. If problem persists, contact your dealer or service organization.
dY	Inadequate water detected in heater. (Displays on third occurrence of "dr" message.) Spa is shut down.	Follow action required for "dr" message. Spa will not automatically reset. Press any button to reset.

Warning! Shock Hazard! No User Serviceable Parts.

Do not attempt service of this control system. Contact your dealer or service organization for assistance. Follow all owner's manual power connection instructions. Installation must be performed by a licensed electrician and all grounding connections must be properly installed.

Palermo Standard Spa system

BALBOA TP600

HOT TUB Control panel

Main screen

NAVIGATION

Navigating the entire menu structure is done with 2 or 3 buttons on the control panel. Panels that have two Temperature buttons (Warm and Cool) can use both of them to simplify navigation and programming where a single Temperature icon is shown.
The **LIGHT** Button is also used to choose the various menus and navigate each section.
Typical use of the Temperature button(s) allows changing the Set Temperature while the numbers are flashing in the LCD. Pressing the **LIGHT** button while the numbers are flashing will enter the menus.
The menus can be exited with certain button presses. Simply waiting for several seconds will return the panel operation to normal.

KEY

Indicates Alternating or Progressive Message - every 1/2 second

Indicates flashing or changing segment

A temperature button, used for “Action”

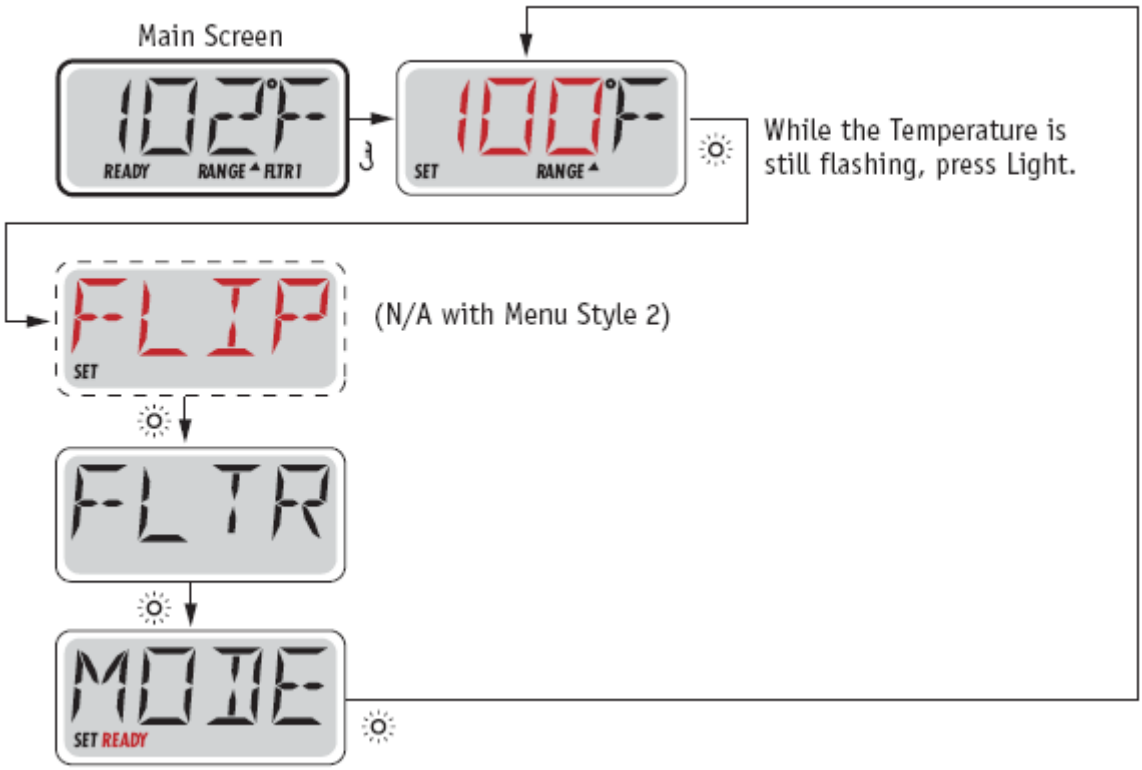
Light or dedicated “Choose” button, depending on control panel configuration

●●●●● Waiting time that keeps the last change to a menu item.

***** Waiting time (depends on menu item) that reverts to original setting and ignores any change to that menu item.

POWER-UP SCREENS

Each time the System powers up, a series of numbers is displayed. After the startup sequence of numbers, the system will enter Priming Mode.



Waiting Several Seconds in the Main Menu will allow the display to revert to the Main Screen. Most changes are not saved unless Light is pressed. Refer to Key above.

Indicates a Menu Item that Depends on a Manufacturer Configuration and may or may not appear.

PREPARATION AND FILLING

Fill the spa to its correct operating level. Be sure to open all valves and jets in the plumbing system before filling to allow as much air as possible to escape from the plumbing and the control system during the filling process.

After turning the power on at the main power panel, the top-side panel display will go through specific sequences. These sequences are normal and display a variety of information regarding the configuration of the hot tub control.

PRIMING MODE – M019*

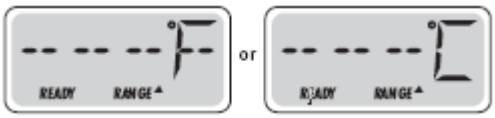
This mode will last for 4-5 minutes or you can manually exit the priming mode after the pump(s) have primed.

*M019 is a Message Code.

Regardless of whether the priming mode ends automatically or you manually exit the priming mode, the system will automatically return to normal heating and filtering at the end of the priming mode. During the priming mode, the heater is disabled to allow the priming process to be completed without the possibility of energizing the heater under low-flow or no-flow conditions. Nothing comes on automatically, but the pump(s) can be energized by pushing the "Jet" buttons.
If the spa has a Circ Pump, it can be activated by pressing the "Light" button during Priming Mode.

EXITING PRIMING MODE

You can manually exit Priming Mode by pressing a "Temp" button (Up or Down). Note that if you do not manually exit the priming mode as described above, the priming mode will be automatically terminated after 4-5 minutes. Be sure that the pump(s) have been primed by this time.
Once the system has exited Priming Mode, the top-side panel will momentarily display the set temperature but the display will not show the temperature yet, as shown below. This is because the system requires approximately 1 minute of water flowing through the heater to determine the water temperature and display it.



PUMPS

Press the "Jets 1" button once to turn pump 1 on or off, and to shift between low- and high-speeds if equipped.
If left running, the pump will turn off after a time-out period. The pump 1 low-speed will time out after 30 minutes. The high-speed will time out after 15 minutes.
On non-circ systems, the low-speed of pump 1 runs when the blower or any other pump is on. If the spa is in Ready Mode, Pump 1 low may also activate for at least 1 minute every 30 minutes to detect the spa temperature (polling) and then to heat to the set temperature if needed. When the low-speed turns on automatically, it cannot be deactivated from the panel, however the high speed may be started.

Circulation Pump Modes

If the system is equipped with a circ pump, it will be configured to work in one of three different ways:
1, The circ pump operates continuously (24 hours) with the exception of turning off for 30 minutes at a time when the water temperature reaches 3°F (1.5°C) above the set temperature (most likely to happen in very hot climates).
2, The circ pump stays on continuously, regardless of water temperature.
3, A programmable circ pump will come on when the system is checking temperature (polling), during filter cycles, during freeze conditions, or when another pump is on.
The specific Circulation Mode that is used has been determined by the Manufacturer and cannot be changed in the field.

FILTRATION AND OZONE

On non-circ systems, Pump 1 low and the ozone generator (if there is one) will run during filtration. On circ systems, the ozone will run with the circ pump.
The system is factory-programmed with two filter cycles that will run 10 minutes after power-up. The filter duration is programmable.
At the start of each filter cycle, the blower (if there is one) or Pump 2 (if there is one) will run briefly to purge its plumbing to maintain good water quality.

FREEZE PROTECTION

If the temperature sensors within the heater detect a low enough temperature, then the pump(s) and the blower automatically activate to provide freeze protection. The pump(s) and blower will run either continuously or periodically depending on conditions.
In colder climates, an optional additional freeze sensor may be added to protect against freeze conditions that may not be sensed by the standard sensors. Auxiliary freeze sensor protection acts similarly except with the temperature thresholds determined by the switch. See your dealer for details.

CLEAN-UP CYCLE (OPTIONAL)

When a pump or blower (if there is one) is turned on by a button press, a clean-up cycle begins 30 minutes after the pump or blower is turned off or times out. The pump and the ozone generator (if there is one) will run for 30 minutes or more, depending on the system.

ADJUSTING THE SET TEMPERATURE

When using a panel with Up and Down buttons (Temperature buttons), pressing Up or Down will cause the temperature to flash. Pressing a temperature button again will adjust the set temperature in the direction indicated on the button. When the LCD stops flashing, the spa will heat to the new set temperature when required.
If the panel has a single temperature button, pressing the button will cause the temperature to flash. Pressing the button again will cause the temperature to change in one direction (e.g. UP). After allowing the display to stop flashing, pressing the Temperature Button will cause the temperature to flash and the next press will change the temperature in the opposite direction (e.g. DOWN).
The temperature can be set between 60°F and 104°F.

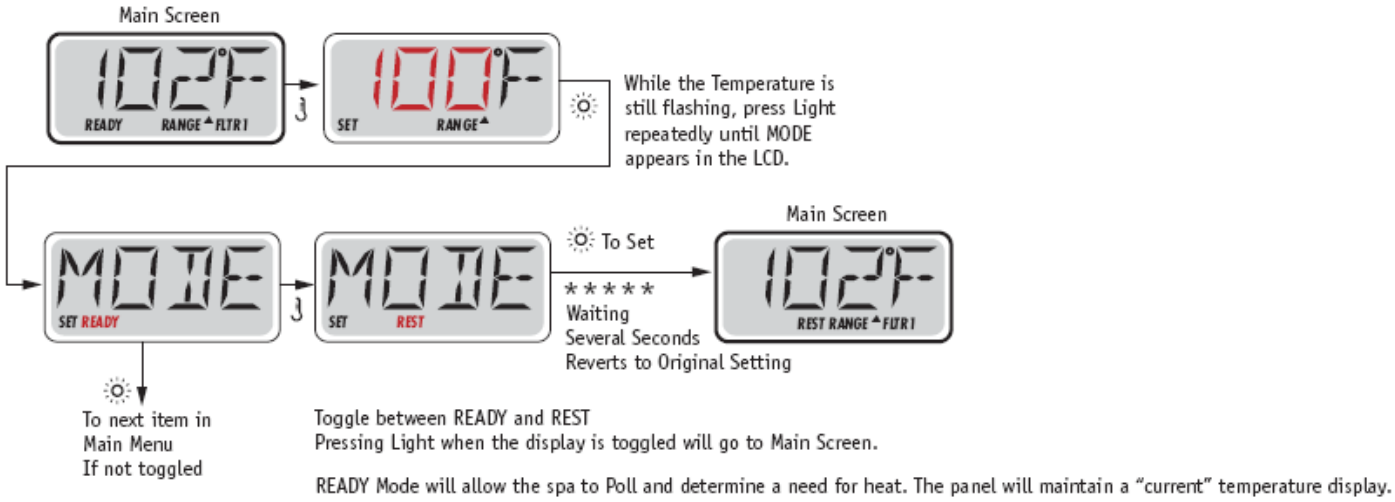
PRESS-AND-HOLD

If a Temperature button is pressed and held when the temperature is flashing, the temperature will continue to change until the button is released. If only one temperature button is available and the limit of the Temperature Range is reached when the button is being held, the progression will reverse direction.

In order for the spa to heat, a pump needs to circulate water through the heater. The pump that performs this function is known as the “heater pump.”
The heater pump can be either a 2-Speed Pump 1 or a circulation pump.
If the heater pump is a 2-Speed Pump 1, READY Mode will circulate water every 1/2 hour, using Pump 1 Low, in order to maintain a constant water temperature, heat as needed, and refresh the temperature display. This is known as “polling.”
REST Mode will only allow heating during programmed filter cycles. Since polling does not occur, the temperature display may not show a current temperature until the heater pump has been running for a minute or two.

CIRCULATION MODE

If the spa is configured for 24HR circulation, the heater pump generally runs continuously. Since the heater pump is always running, the spa will maintain set temperature and heat as needed in Ready Mode, without polling.
In Rest Mode, the spa will only heat to set temperature during programmed filter times, even though the water is being filtered constantly when in Circulation Mode.

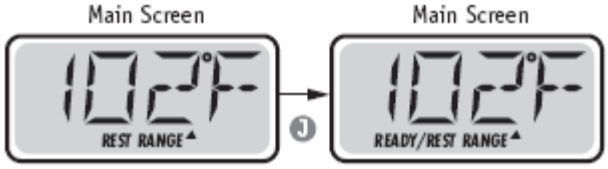

Main Screen
102°F
READY RANGE ▲ FLTR 1
100°F
SET RANGE ▲
While the Temperature is still flashing, press Light repeatedly until MODE appears in the LCD.
MODE
SET READY
MODE
SET REST
To Set
* * * * *
Waiting
Several Seconds
Reverts to Original Setting
Main Screen
102°F
REST RANGE ▲ FLTR 1
To next item in Main Menu If not toggled
Toggle between READY and REST
Pressing Light when the display is toggled will go to Main Screen.
READY Mode will allow the spa to Poll and determine a need for heat. The panel will maintain a “current” temperature display.

REST Mode will not Poll and will only heat during filter cycles. The panel will not display a current temperature at all times.

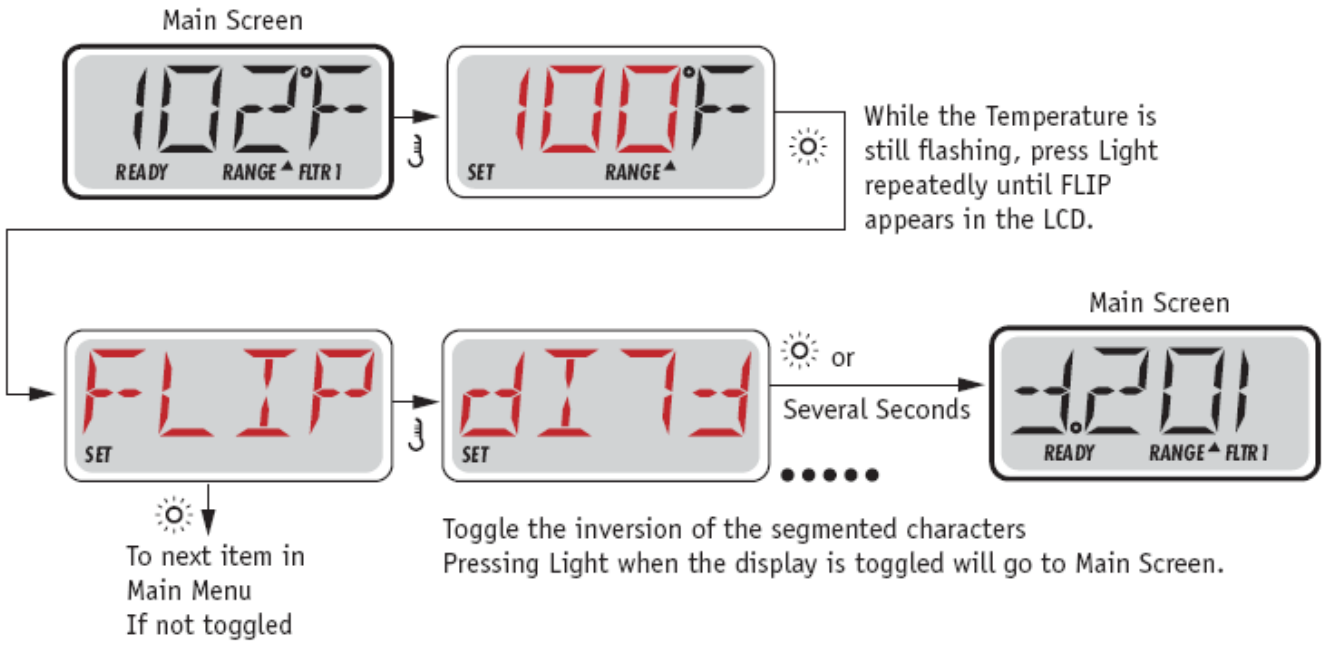
The Main Screen will display RUN PUMP FOR TEMP if the filtration pump has not run for over 1 hour.
The Main Screen will display normally during Filter Cycles or when the spa is in use.
If the filtration pump has been off for an hour or more, when any function button, EXCEPT Light, is pressed on the panel, the pump used in conjuncton with the heater will run so that temperature can be sensed and displayed.

READY-IN-REST MODE

READY/REST appears in the display if the spa is in Rest Mode and Jet 1 is pressed. It is assumed that the spa is being used and will heat to set temperature. While Pump 1 High can be turned on and off, Pump 1 Low will run until set temperature is reached, or 1 hour has passed. After 1 hour, the System will revert to Rest Mode. This mode can also be reset by entering the Mode Menu and changing the Mode.



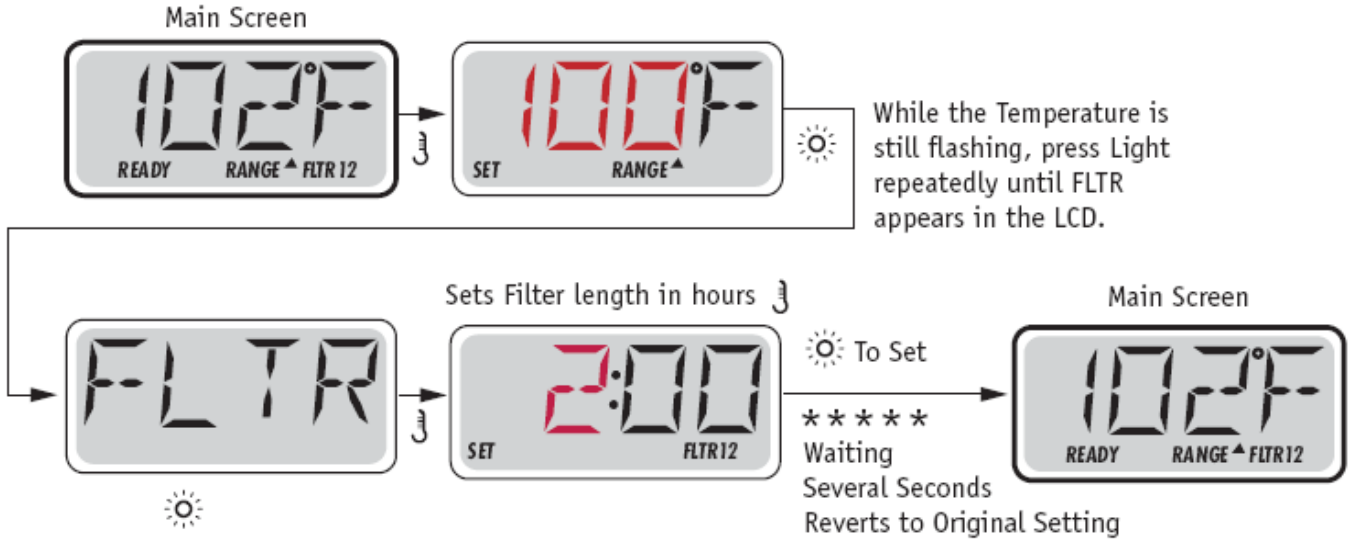
FLIP (INVERT DISPLAY)



Note: Some panels may have a dedicated FLIP button, which allows the user to flip the display with a single button-press. The FLIP menu/functionality depends on Manufacturer configuration and may not be available. (Menu Style 1)

MAIN FILTRATION

Filter cycles are set using a duration. Each setting can be adjusted in 1-hour increments. Filter Cycle 1 and Filter Cycle 2 (if enabled) are set to the same duration.



If Filter Cycle 2 is enabled, Filter 12 will appear in the LCD. If Filter is disabled, Filter 1 will appear.

PURGE CYCLES

In order to maintain sanitary conditions, secondary Pumps and/or a Blower will purge water from their respective plumbing by running briefly at the beginning of each filter cycle.

GENERAL MESSAGES

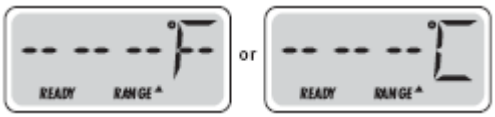
Priming Mode – M019

Each time the spa is powered up, it will enter Priming Mode. The purpose of Priming Mode is to allow the user to run each pump and manually verify that the pumps are primed (air is purged) and water is flowing. This typically requires observing the output of each pump separately, and is generally not possible in normal operation. Priming Mode lasts 4 minutes, but you can exit it earlier by pressing any Temp button. The heater is not allowed to run during Priming Mode.

NOTE: If your spa has a Circ Pump, it will turn on with Jets 1 in Priming Mode. The Circ Pump will run by itself when Priming Mode is exited.

Water Temperature is Unknown

After the pump has been running for 1 minute, the temperature will be displayed.



Too Cold – Freeze Protection

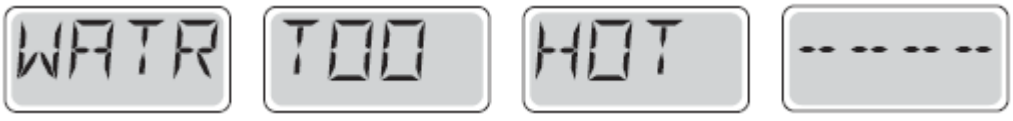
A potential freeze condition has been detected, or the Aux Freeze Switch has closed, and all pumps and blower are activated. All pumps and blower are ON for at least 4 minutes after the potential freeze condition has ended, or when the aux freeze switch opens.

In some cases, pumps may turn on and off and the heater may operate during Freeze Protection.

This is an operational message, not an error indication.

Water is too Hot (OHS) – M029

One of the water temp sensors has detected spa water temp 110°F (43.3°C) and spa functions are disabled. System will auto reset when the spa water temp is below 108°F (42.2°C). Check for extended pump operation or high ambient temp.



Safety Trip - Pump Suction Blockage* – M033

The Safety Trip error message indicates that the vacuum switch has closed. This occurs when there has been a suction problem or a possible entrapment situation avoided. (Note: not all spas have this feature.)

* This message can be reset from the topside panel with any button press.

HEATER-RELATED MESSAGES

Heater Flow is Reduced (HFL) – M016

There may not be enough water flow through the heater to carry the heat away from the heating element. Heater start up will begin again after about 1 min. See “Flow Related Checks” below.

Heater Flow is Reduced (LF)* – M017

There is not enough water flow through the heater to carry the heat away from the heating element and the heater has been disabled. See “Flow Related Checks” below. After the problem has been resolved, you must press any button to reset and begin heater start up.

Heater may be Dry (dr)* – M028

Possible dry heater, or not enough water in the heater to start it. The spa is shut down for 15 min. Press any button to reset the heater start-up. See “Flow Related Checks” below.

Heater is Dry* – M027

There is not enough water in the heater to start it. The spa is shut down. After the problem has been resolved, you must press any button to reset and restart heater start up. See “Flow Related Checks” below.

Heater is too Hot (OHH)* – M030

One of the water temp sensors has detected 118°f (47.8°C) in the heater and the spa is shut down. You must press any button to reset when water is below 108°f (42.2°C). See “Flow Related Checks” below.

A Reset Message may Appear with other Messages.

Some errors may require power to be removed and restored.

Flow-Related Checks

Check for low water level, suction flow restrictions, closed valves, trapped air, too many closed jets and pump prime. On some systems even when spa is shut down, some equipment may occasionally turn on to continue monitoring temperature or if freeze protection is needed.

* This message can be reset from the topside panel with any button press.

SENSOR-RELATED MESSAGES

Sensor Balance is Poor – M015
The temperature sensors MAY be out of sync by 2°F or 3°F. Call for Service.

Sensor Balance is Poor* – M026
The temperature sensors ARE out of sync. The Sensor Balance is Poor fault has been established for at least 1 hour. Call for Service.

Sensor Failure – Sensor A: M031, Sensor B: M032
A temperature sensor or sensor circuit has failed. Call for Service.

MISCELLANEOUS MESSAGES

No Communications
The control panel is not receiving communication from the System. Call for Service.

Pre-Production Software
The Control System is operating with test software. Call for Service.

°F or °C is replaced by °T
The Control System is in Test Mode. Call for Service.

* This message can be reset from the topside panel with any button press.

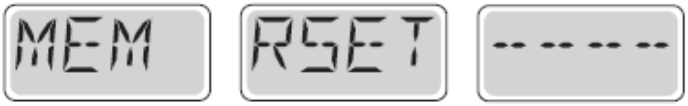
SYSTEM-RELATED MESSAGES

Memory Failure - Checksum Error* – M022

At Power-Up, the system has failed the Program Checksum Test. This indicates a problem with the firmware (operation program) and requires a service call.

Memory Warning - Persistent Memory Reset* – M021

Appears after any system setup change. Contact your dealer or service organization if this message appears on more than one power-up, or if it appears after the system has been running normally for a period of time.



Memory Failure - Clock Error* – M020 - Not Applicable on the BP1500

Contact your dealer or service organization.

Configuration Error – Spa will not Start Up

Contact your dealer or service organization.

GFCI Failure - System Could Not Test/Trip the GFCI – M036

NORTH AMERICA ONLY. May indicate an unsafe installation. Contact your dealer or service organization.

A Pump Appears to be Stuck ON – M034

Water may be overheated. POWER DOWN THE SPA. DO NOT ENTER THE WATER. Contact your dealer or service organization.

A Pump Appears to have been Stuck ON when spa was last powered – M035

POWER DOWN THE SPA. DO NOT ENTER THE WATER. Contact your dealer or service organization.

* This message can be reset from the topside panel with any button press.

REMINDER MESSAGES

General maintenance helps
Reminder Messages can be suppressed by using the PREF Menu.
Reminder Messages can be chosen individually by the Manufacturer. They may be disabled entirely, or there may be a limited number of reminders on a specific model.
The frequency of each reminder (i.e. 7 days) can be specifi ed by the Manufacturer.
Press a Temperature button to reset a displayed reminder message.

Appears on a regular schedule, e.g. every 7 days.
Check pH with a test kit and adjust pH with the appropriate chemicals.
Alternates with temperature or normal display.

Appears on a regular schedule, e.g. every 7 days.
Check sanitizer level and other water chemistry with a test kit and adjust with the appropriate chemicals.
Alternates with temperature or normal display.

Appears on a regular schedule, e.g. every 30 days.
Clean the filter media as instructed by the manufacturer.
Alternates with temperature or normal display.

Appears on a regular schedule, e.g. every 30 days.
The Ground Fault Circuit Interrupter (GFCI) or Residual Current Device (RCD) is an important safety device and must be tested on a regular basis to verify its reliability.
Every user should be trained to safely test the GFCI or RCD associated with the hot tub installation.
A GFCI or RCD will have a TEST and RESET button on it that allows a user to verify proper function.
Alternates with temperature or normal display.

Warning:
If freezing conditions exist, a GFCI or RCD should be reset immediately or spa damage could result.
The end user should always trained to test and reset the GFCI or RCD on a regular basis.

Appears on a regular schedule, e.g. every 90 days.
Change the water in the spa on regular basis to maintain proper chemical balance and sanitary conditions.
Alternates with temperature or normal display.

Appears on a regular schedule, e.g. every 180 days.
Vinyl covers should be cleaned and conditioned for maximum life.
Alternates with temperature or normal display.

Appears on a regular schedule, e.g. every 180 days.
Wood skirting and furniture should be cleaned and conditioned per the manufacturers instructions for maximum life.
Alternates with temperature or normal display.

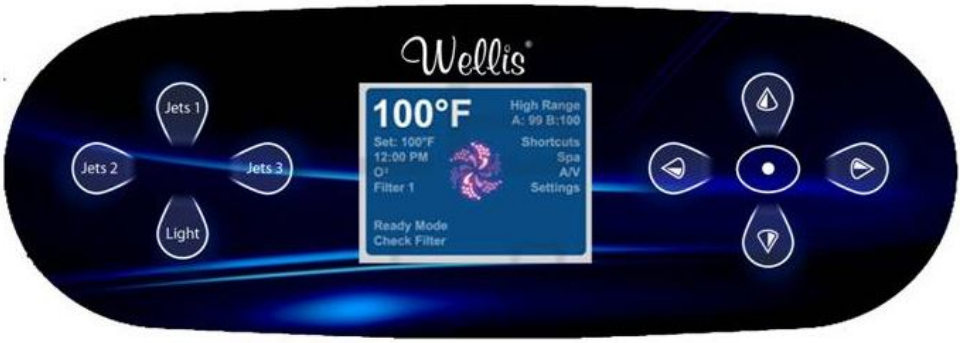
Appears on a regular schedule, e.g. every 365 days.
Filters should be replaced occasionally to maintain proper spa function and sanitary conditions.
Alternates with temperature or normal display.

As needed.
Install new mineral cartridge
Alternates with temperature or normal display.

Palermo Deluxe Spa system

BALBOA TP800

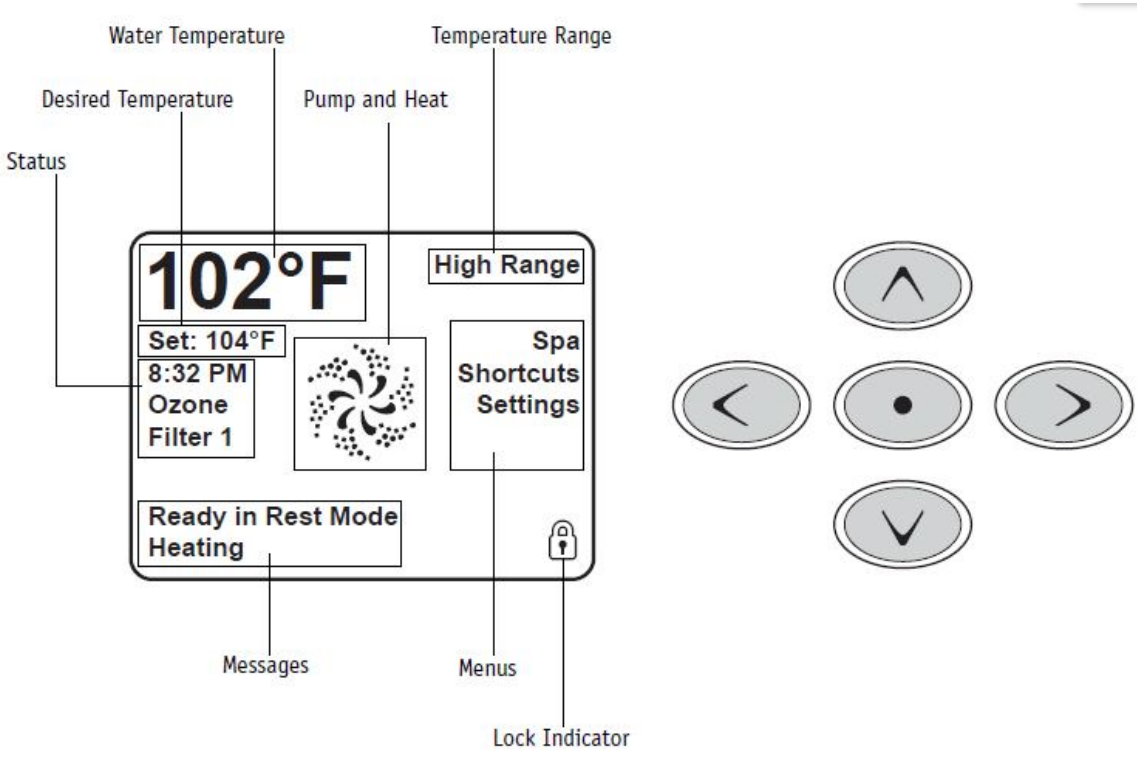
HOT TUB Control panel



Main screen

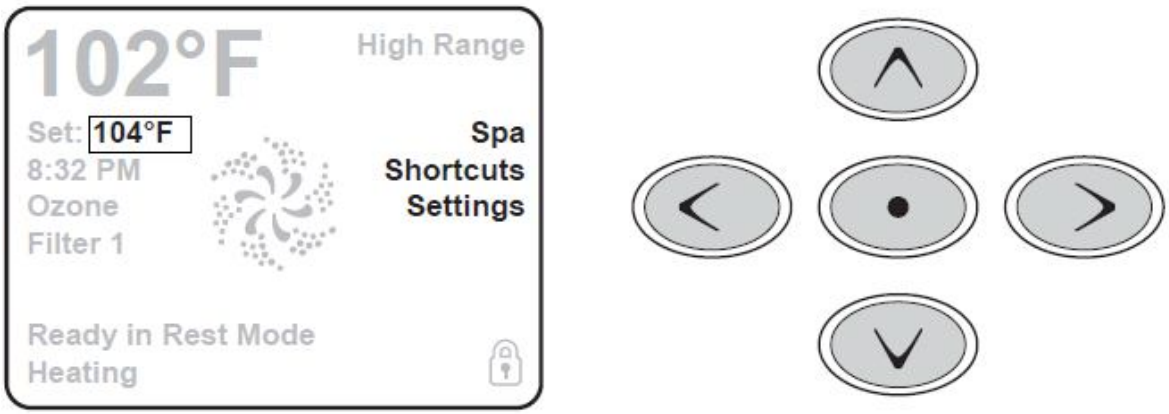
SPA STATUS

Important information about spa operation can be seen quickly from the Main Screen.
The most important features, including Set Temperature adjustment, can be accessed from this screen.
The actual water temperature can be seen in large text and the desired, or Set Temperature, can be selected and adjusted.
Time-of-day, Ozone operation and Filter Operation status is available, along with other messages and alerts.
High Temperature Range vs. Low Temperature Range is indicated in the upper right corner.
The Jets Icon in the center will spin on a TP900 if any pump is running and changes color when the heater is on. (The icon does not spin on a TP800, but still indicates pump and heater function.)
A Lock icon is visible if the panel or settings are locked.
The Menu choices on the right can be selected and the screen will change to show more detailed controls or programming functions.



NAVIGATION

Navigating the entire menu structure is done with the 5 buttons on the control panel.
When a text item changes to white during navigation, that indicates the item is selected for action.
Operating or changing a selected item is generally done with the center or “Select” button.
The only item that can be changed on the left side of the Main Screen is the Set Temperature. Press the Left Arrow button to change the Set Temperature number to white. The Set Temperature can then be adjusted with the up and down buttons.
Pressing the Select button or the Right Arrow button will save the new set temperature.
On the right side of the screen, the menu selections can be selected with the Up and Down Buttons. Use the Select Button to choose an item. Selecting one of these items will change to a different screen with additional controls.



MESSAGES

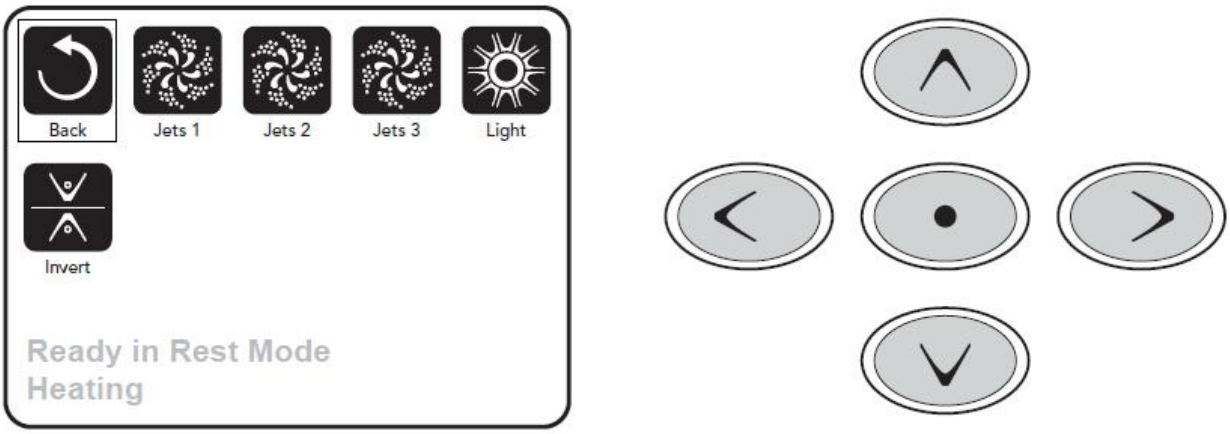
At the bottom of the screen, messages may appear at various times. Some of these messages must be dismissed by the user.

PRESS-AND-HOLD

If an Up or Down button is pressed and held when the Set Temperature is selected, the temperature will continue to change until the button is released, or the Temperature Range limits are reached.

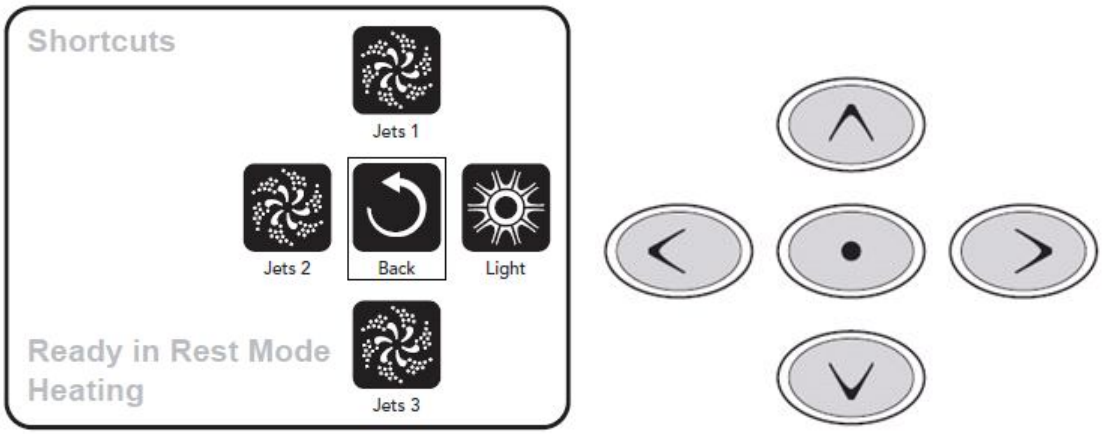
The Spa Screen shows all available equipment to control, as well as other features, like Invert, in one easy-to-navigate screen. The display shows icons that are related to the equipment installed on a particular spa model, so this screen may change depending on the installation.
The navigation buttons are used to select an individual device. The device that is chosen is highlighted with a white outline and the text under the icon changes to white. Once a device is selected, it can be controlled using the center Select Button.
Some devices, like pumps, may have more than one ON state, so the icon will change to refl ect the state that the
equipment is in. Below are some examples of 2-speed Pump indicators.

If the Spa has a Circ Pump, a Circ Pump Icon will appear to indicate its activity, but outside of Priming Mode, the Circ Pump cannot be controlled directly.
NOTE: The icon for the pump that is associated with the heater (Circ or P1 Low) will have a red glow in the center when the heater is running.



ON-PRESS ACTIVATION

The Shortcut Screen requires no navigation. Each button is fi xed on a specifi c fuction and can be used as a very simple user interface for the spa.
Each button function is illustrated in the display and mapped according to the manufacturer's instructions.



PRESSING A „BUTTON"

When instructions are given to "press a button" any of the following can be done:

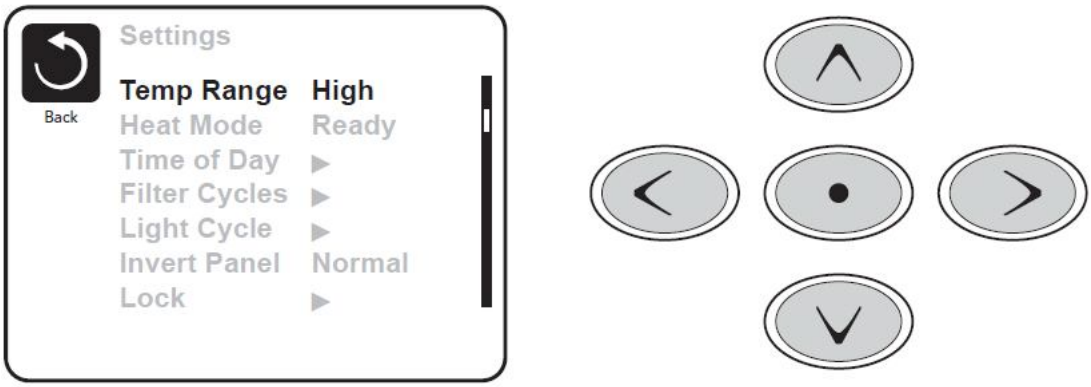
- Navigate to the desired item on any Screen. When the desired item is highlighted, press the Select Button.
- Press the button for that device while on the Shortcuts Screen, if the device is one of the 4 functions available.

PROGRAMMING, ETC.

The Settings Screen is where all programming and other spa behaviors are controlled.
This screen has several features that can be acted on directly. These features include Temp Range, Heat Mode, and Invert Panel. When one of these items is highlighted, the Select Button is used to toggle between two settings. All other menu items (with an arrow pointing to the right) go to another level in the menu.

PRESS-AND-HOLD

If an Up or Down button is pressed and held when an item in a Menu List is highlighted, the list can be scrolled quickly from top to bottom. The scroll bar on the right side of the screen indicates the relative position of the highlighted item in the list.



DUAL TEMPERATURE RANGES (HIGH VS. LOW)

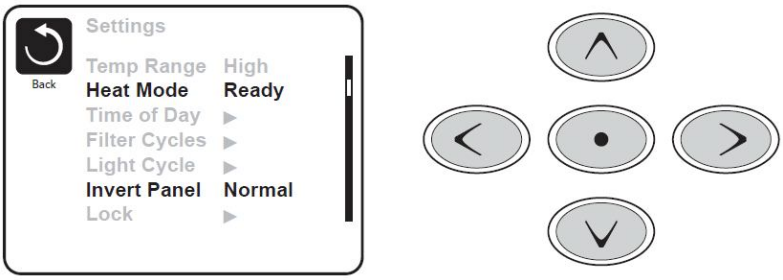
This system incorporates two temperature range settings with independent set temperatures. The specific range can be selected on the Settings screen and is visible on the Main Screen in the upper right corner of the display.
These ranges can be used for various reasons, with a common use being a “ready to use” setting vs. a “vacation” setting.
Each range maintains its own set temperature as programmed by the user. This way, when a range is chosen, the spa will heat to the set temperature associated with that range.
High Range can be set between 80°F and 104°F.
Low Range can be set between 50°F and 99°F.
More specific Temp Ranges may be determined by the Manufacturer.
Freeze Protection is active in either range.

HEAT MODE – READY VS. REST

In order for the spa to heat, a pump needs to circulate water through the heater. The pump that performs this function is known as the “heater pump.”
The heater pump can be either a 2-speed pump (Pump 1) or a circulation pump.
If the heater pump is a 2-Speed Pump 1, READY Mode will circulate water every 1/2 hour, using Pump 1 Low, in order to maintain a constant water temperature, heat as needed, and refresh the temperature display. This is known as “polling.”
REST Mode will only allow heating during programmed filter cycles. Since polling does not occur, the temperature display may not show a current temperature until the heater pump has been running for a minute or two. While Pump 1 High can be turned on and off, Pump 1 Low will run until set temperature is reached, or 1 hour has passed.

Circulation Mode

If the spa is configured for 24HR circulation, the heater pump generally runs continuously. Since the heater pump is always running, the spa will maintain set temperature and heat as needed in Ready Mode, without polling.
In Rest Mode, the spa will only heat to set temperature during programmed filter times, even though the water is being filtered constantly when in Circulation Mode.



READY-IN-REST MODE

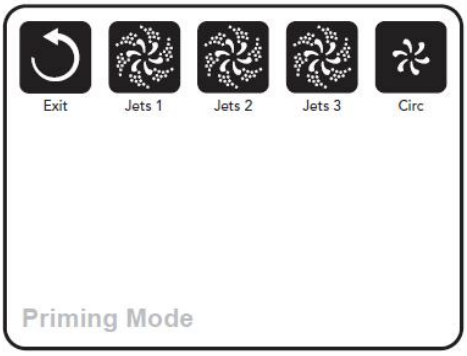
READY/REST appears in the display if the spa is in Rest Mode and the Jets 1 Button is pressed. It is assumed that the spa is being used and will heat to set temperature. While Pump 1 High can be turned on and off, Pump 1 Low will run until set temperature is reached, or 1 hour has passed. After 1 hour, the System will revert to Rest Mode. This mode can also be reset by entering the Settings Menu and changing the Heat Mode.

PREPARATION AND FILLING

Fill the spa to its correct operating level. Be sure to open all valves and jets in the plumbing system before filling to allow as much air as possible to escape from the plumbing and the control system during the fi lling process. After turning the power on at the main power panel, the top-side panel will display a splash, or startup screen.

PRIMING MODE – M019*

After the initial start-up sequence, the control will enter Priming Mode and display a Priming Mode screen. Only pump icons appear on the priming mode screen. The system will automatically return to normal heating and filtering at the end of the priming mode, which lasts 4-5 minutes. During the priming mode, the heater is disabled to allow the priming process to be completed without the possibility of energizing the heater under low-flow or no-flow conditions. Nothing comes on automatically, but the pump(s) can be energized by selecting the “Jet” buttons. If the spa has a Circ Pump, it can be turned on and off by pressing the “Circ Pump” button during Priming Mode. In addition, if the spa has a Circ Pump, it can be activated by pressing the dedicated “Light” button during Priming Mode when using a TP800.
Manually exit Priming Mode by pressing the “Exit” Button.



PRIMING THE PUMPS

As soon as the Priming Mode screeen appears on the panel, select the “Jets 1” button once to start Pump 1 in low-speed and then again to switch to high-speed. Also, select the other pumps, to turn them on. The pumps should be running in high-speed to facilitate priming. If the pumps have not primed after 2 minutes, and water is not flowing from the jets in the spa, do not allow the pumps to continue to run. Turn off the pumps and repeat the process. **Note:** Turning the power off and back on again will initiate a new pump priming session. Sometimes momentarily turning the pump off and on will help it to prime. Do not do this more than 5 times. If the pump(s) will not prime, shut off the power to the spa and call for service.

Important: A pump should not be allowed to run without priming for more than 2 minutes. Under NO circumstances should a pump be allowed to run without priming beyond the end of the 4-5 minute priming mode. Doing so may cause damage to the pump and cause the system to energize the heater and go into an overheat condition.

EXITING PRIMING MODE

You can manually exit Priming Mode by navigating to the “Back” button on the Priming Mode Screen. Note that if you do not manually exit the priming mode as described above, the priming mode will be automatically terminated after 4-5 minutes. Be sure that the pump(s) have been primed by this time.

Once the system has exited Priming Mode, the top-side panel will display the Main Screen, but the display will not show the temperature yet, as shown below. This is because the system requires approximately 1 minute of water flowing through the heater to determine the water temperature and display it.

– – –°F – – –°C

PUMPS

On the Spa Screen, select a “Jets” button once to turn the pump on or off, and to shift between low- and high-speeds if equipped. If left running, the pump will turn off after a time-out period. The pump 1 low-speed will time out after 30 minutes. The high-speed will time-out after 15 minutes.

On non-circ systems, the low-speed of pump 1 runs when the blower or any other pump is on. If the spa is in Ready Mode, Pump 1 low may also activate for at least 1 minute every 30 minutes to detect the spa temperature (polling) and then to heat to the set temperature if needed. When the low-speed turns on automatically, it cannot be deactivated from the panel, however the high speed may be started.

Circulation Pump Modes

If the system is equipped with a circ pump, it will be configured to work in one of three different ways:

1. The circ pump operates continuously (24 hours) with the exception of turning off for 30 minutes at a time when the water temperature reaches 3°F (1.5°C) above the set temperature (most likely to happen in very hot climates).
2. The circ pump stays on continuously, regardless of water temperature.
3. A programmable circ pump will come on when the system is checking temperature (polling), during filter cycles, during freeze conditions, or when another pump is on.

The specific Circulation Mode that is used has been determined by the Manufacturer and cannot be changed in the field. Other device options may be available, like Blower, Light, Mist, etc.

FILTRATION AND OZONE

On non-circ systems, Pump 1 low and the ozone generator (if installed) will run during filtration. On circ systems, the ozone will generally run with the circ pump, but can be limited to filtration cycles.
The system is factory-programmed with one filter cycle that will run in the evening (assuming the time-of-day is properly set) when energy rates are often lower. The filter time and duration are programmable. A second filter cycle can be enabled as needed.
At the start of each filter cycle, the water devices like blower, mist device (if these exist) and other pumps will run briefly to purge the plumbing to maintain good water quality.

FREEZE PROTECTION

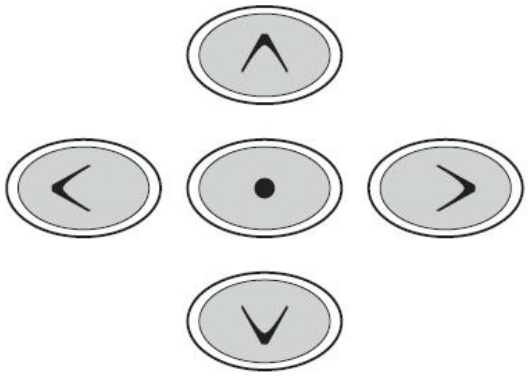
If the temperature sensors within the heater detect a low enough temperature, then the water devices automatically activate to provide freeze protection. The water devices will run either continuously or periodically depending on conditions.
In colder climates, an optional additional freeze sensor may be added to protect against freeze conditions that may not be sensed by the standard sensors. Auxiliary freeze sensor protection acts similarly except with the temperature thresholds determined by the switch. See your dealer for details.

CLEAN-UP CYCLE (OPTIONAL)

When a pump or blower is turned on by a button press, a clean-up cycle begins 30 minutes after the pump or blower is turned off or times out. The pump and the ozone generator (if installed) will run for 30 minutes or more, depending on the system. On some systems, you can change this setting.

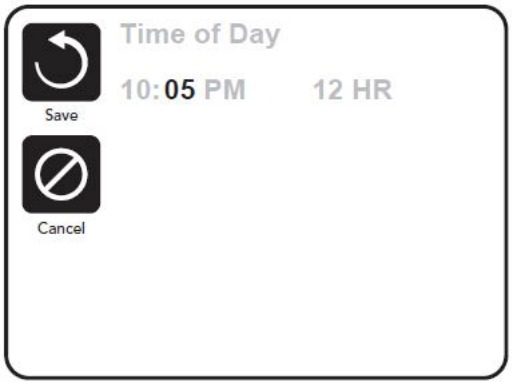
BE SURE TO SET THE TIME-OF-DAY

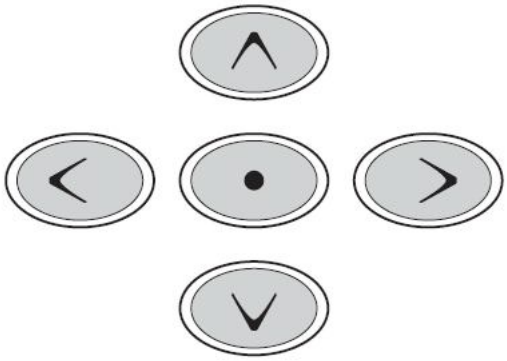
Setting the time-of-day is important for determining filtration times and other background features. “Set Time” will appear on the display if no time-of-day is set in the memory. On the Settings Screen, select the Time-of-Day line. On the Time-of-Day screen, simply navigate right and left to select the Hour, Minutes, AM/PM and 12/24 Hour segments. Use the Up and Down Buttons to make changes.



SAVING SETTINGS

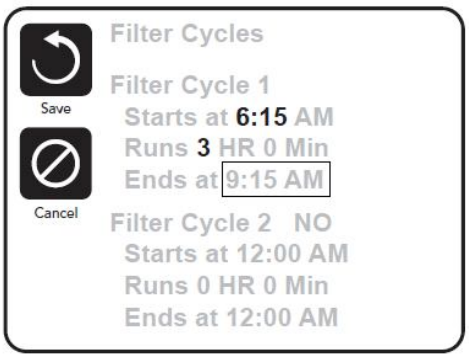
The Time-of-Day screen is a simple, editable screen that illustrates a feature of the control that applies to all other editable screens as well.
When changes are made, the icon to go “Back” changes to “Save” and a new icon for “Cancel” appears under the Save icon. Navigating to the left will highlight the Save icon, and navigating down from there will allow the user to cancel the pending change. Pressing the “Select” button will save or cancel the changes and go back to the previous screen.
Note: If power is interrupted to the system, Time-of-Day will be maintained for several days.





MAIN FILTRATION

Using the same navigation and adjustment as Setting the Time, Filter Cycles are set using a start time and a duration. Each setting can be adjusted in 15-minute increments. The panel calculates the end time and displays it automatically.



FILTER CYCLE 2 – OPTIONAL FILTRATION

Filter Cycle 2 is OFF by default.
Simply navigate to the Filter Cycle 2 line by pressing the Right Navigation Button, and when “NO” is highlighted, press Up or Down to toggle Filter Cycle 2 on and off. When Filter Cycle 2 is ON, it can be adjusted in the same manner as Filter Cycle 1 by navigating to the right.
It is possible to overlap Filter Cycle 1 and Filter Cycle 2, which will shorten overall fi ltration by the overlap amount.

CIRCULATION PUMP MODES

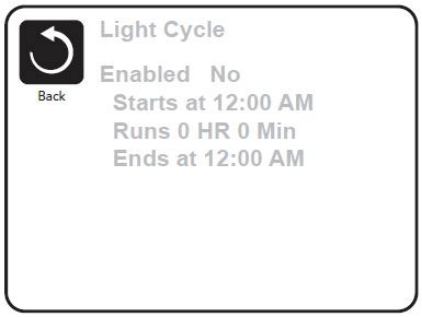
Some spas may be manufactured with Circ Pump settings that allow programming filtration cycle duration. Some circ Modes are pre-programmed to operate 24 hours a day and are not programmable. Refer to the spa manufacturer's documentation for any Circ Mode details.

PURGE CYCLES

In order to maintain sanitary conditions, as well as protect against freezing, secondary water devices will purge water from their respective plumbing by running briefly at the beginning of each filter cycle. If the Filter Cycle 1 duration is set for 24 hours, enabling Filter Cycle 2 will initiate a purge when Filter Cycle 2 is programmed to begin.

LIGHT CYCLE OPTION

If Light Cycle does not appear in the Settings Menu, the Light Timer feature is not enabled by the manufacturer. When available, the Light Timer is OFF by default. The settings can be edited the same way that Filter Cycles are edited.



INVERT PANEL

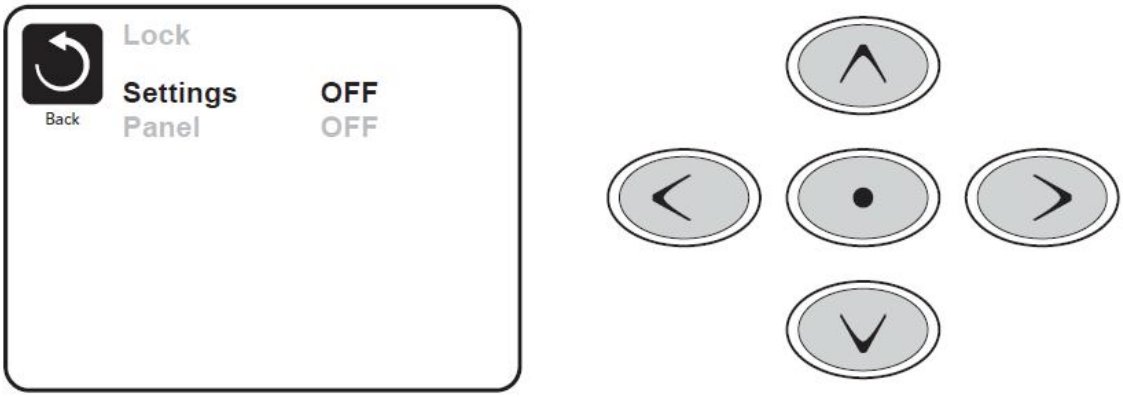
Selecting Invert Panel will flip the display and the buttons so the panel can be easily operated from inside or outside the hot tub.

SPECIFIC BUTTONS FOR SPECIFIC DEVICES

If the panel has dedicated function buttons (TP800) or the spa has an Auxiliary Panel(s) installed, pressing those buttons will activate the device indicated for that button.
These dedicated buttons will operate just like the Spa Screen buttons and the equipment will behave in the same manner with each button press.

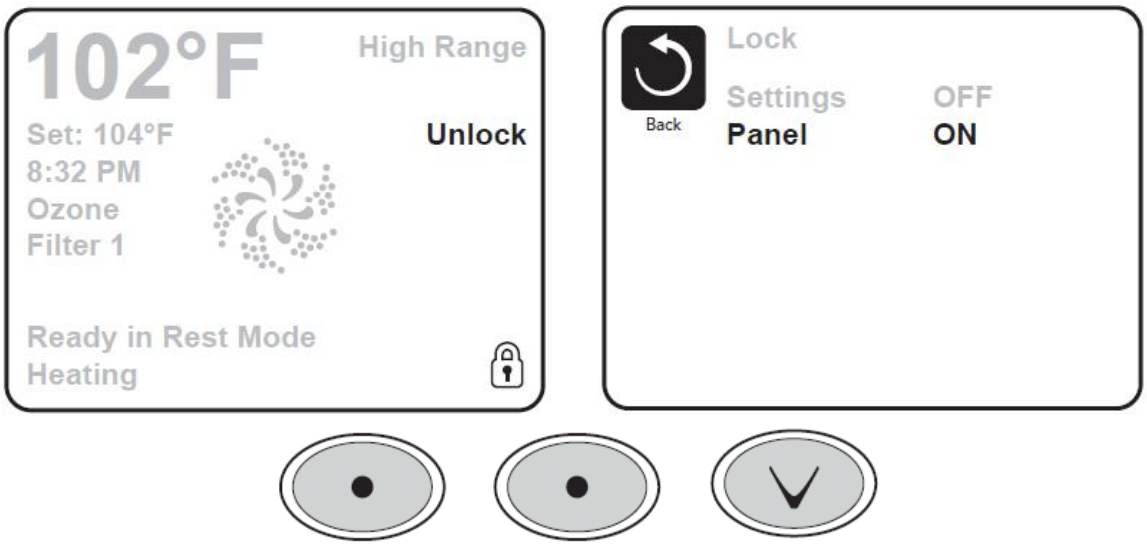
RESTRICTING OPERATION

The control can be restricted to prevent unwanted use or temperature adjustments.
Locking the Panel prevents the controller from being used, but all automatic functions are still active.
Locking the Settings allows Jets and other features to be used, but the Set Temperature and other programmed settings cannot be adjusted. Settings Lock allows access to a reduced selection of menu items. These include Set Temperature, Invert, Lock, Utilities, Information and Fault Log. They can be seen, but not changed or edited.



UNLOCKING

An Unlock Sequence using the navigation buttons can be used from the Lock Screen. The Unlock Sequence is the same for both Panel Lock and Settings Lock.



HOLD MODE - M037*

Hold Mode is used to disable the pumps during service functions like cleaning or replacing the filter. Hold Mode will last for 1 hour unless the mode is exited manually. If spa service will require more than an hour, it may be best to simply shut down power to the spa.

*M036 is a Message Code. Codes like this will be seen in the Fault Log

DRAIN MODE

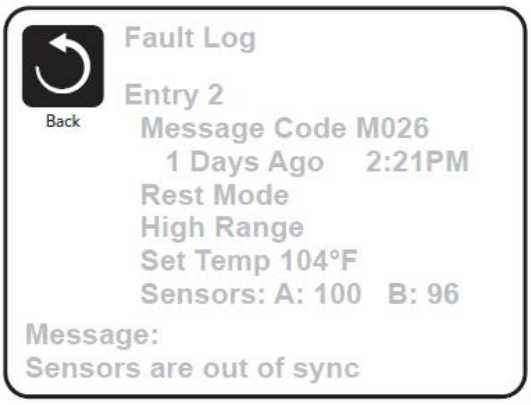
Some spas have a special feature that allows Pump 1 to be employed when draining the water. When available, this feature is a component of Hold Mode.

UTILITIES

The Utilities Menu contains the following:

- **A/B Temps:** When this is set to On, the temperature display will alternate to display temperature from Sensor A and Sensor B in the heater.

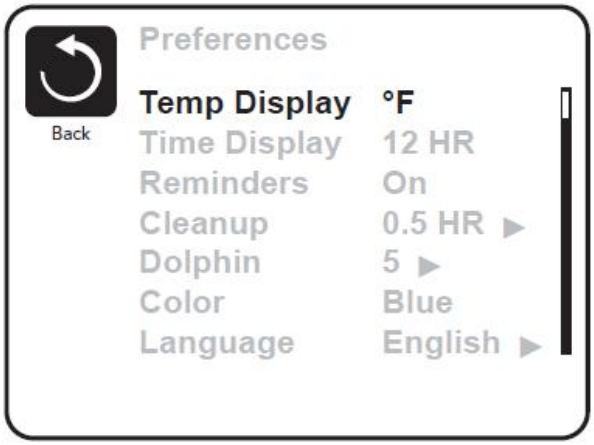
- **Demo Mode:** Demo Mode is not always enabled, so it may not appear. This is designed to operate several devices in a sequence in order to demonstrate the various features of a particular hot tub.
- **Fault Log:** The Fault Log is a record of the last 24 faults that can be reviewed by a service tech.
- **GFCI Test (Feature not available on CE rated systems.):** GFCI Test is not always enabled, so it may not appear. This screen allows the GFCI to be tested manually from the panel and can be used to reset the automatic test feature. If the GFCI Test Feature is reset, the device will trip within 7 days.



PREFERENCES

The Preferences Menu allows the user to change certain parameters based on personal preference.

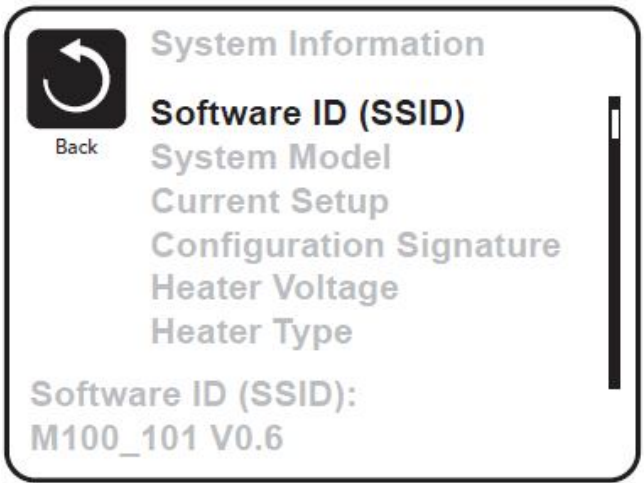
- **Temp Display:** Change the temperature between Fahrenheit and Celsius.
- **Time Display:** Change the clock between 12 hr and 24 hr display.
- **Reminders:** Turn the reminder messages (like “Clean Filter”) On or Off.
- **Cleanup:** Cleanup Cycle Duration is not always enabled, so it may not appear. When it is available, set the length of time Pump 1 will run after each use. 0-4 hours are available.
- **Dolphin II and Dolphin III (Applies to RF Dolphin only):** When set to 0, no addressing is used. Use this setting for a Dolphin II or Dolphin III which is factory set for no address by default. When set between 1 and 7, the number is the address. (See the Dolphin manual for details.)
- **Color:** Pressing the Select Button when Color is highlighted will cycle through 5 background colors available in the control.
- **Language:** Change the language displayed on the panel.



SYTEM INFORMATION

The System Information Menu displays various settings and identification of the particular system. As each item in the menu is highlighted, the detail for that item is displayed at the bottom of the screen.

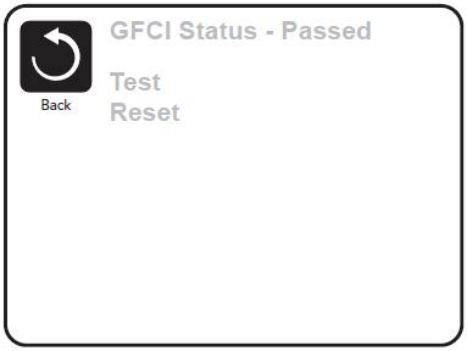
- **Software ID (SSID):** Displays the software ID number for the System.
- **System Model:** Displays the Model Number of the System.
- **Current Setup:** Displays the currently selected Configuration Setup Number.
- **Configuration Signature:** Displays the checksum for the system configuration file.
- **Heater Voltage (Feature not used on CE rated systems.):** Displays the operating voltage configured for the heater.
- **Heater Wattage as Confi gured in Software (CE Systems Only.):** Displays a heater kilowatt rating as programmed into the control system software (1-3 or 3-6).
- **Heater Type:** Displays a heater type ID number.
- **Dip Switch Settings:** Displays a number that represents the DIP switch positions of S1 on the main circuit board.
- **Panel Version:** Displays a number of the software in the topside control panel.



UTILITIES – GFCI TEST FEATURE

The Ground Fault Circuit Interrupter (GFCI) or Residual Current Detector (RCD) is an important safety device and is required equipment on a hot tub installation. **(The GFCI Test Feature is not available on CE rated systems.) Used for verifying a proper installation.**
Your spa may be equipped with a GFCI Protection feature. If your spa has this feature enabled by the manufacturer, the GFCI Trip Test must occur to allow proper spa function. Within 1 to 7 days after startup, the spa will trip the GFCI to test it. (The number of days is factory programmed.) The GFCI must be reset once it has tripped. After passing the GFCI Trip Test, any subsequent GFCI trips will indicate a ground fault or other unsafe condition and the power to the spa must be shut off until a service person can correct the problem.

Warning:
The end-user must be trained to expect this one-time test to occur and how to properly reset the GFCI. If freezing conditions exist, the GFCI or RCD should be reset immediately or spa damage could result.
CE Product:
CE registered systems do not have an RCD Test Feature due to the nature of the electrical service. Some UL registered systems do not have the GFCI Test Feature activated. The end-user must be trained how to properly test and reset the RCD.



GENERAL MESSAGES

Most messages and alerts will appear at the bottom of the normally used screens. Several alerts and messages may be displayed in a sequence. ***Some messages can be reset from the panel.*** Messages that can be reset will appear with a “right arrow” at the end of the message. This message can be selected by navigating to it at pressing the Select button.

WATER TEMPERATURE IS UNKNOWN

After the pump has been running for 1 minute, the temperature will be displayed.

– – –°F – – –°C

POSSIBLE FREEZING CONDITION

A potential freeze condition has been detected, or the Aux Freeze Switch has closed. All water devices are activated. In some cases, pumps may turn on and off and the heater may operate during Freeze Protection. This is an operational message, not an error indication.

THE WATER IS TOO HOT – M029

The system has detected a spa water temp of 110°F (43.3°C) or more, and spa functions are disabled. System will auto reset when the spa water temp is below 108°F (42.2°C). Check for extended pump operation or high ambient temp.

M0XX numbers are Message Codes.
*This message can be reset from the topside panel.

HEATER RELATED MESSAGES

The water flow is low – M016
There may not be enough water flow through the heater to carry the heat away from the heating element. Heater start up will begin again after about 1 min. See “Flow Related Checks” below.

The water flow has failed* – M017
There is not enough water flow through the heater to carry the heat away from the heating element and the heater has been disabled. See “Flow Related Checks” below. After the problem has been resolved, you must press any button to reset and begin heater start up.

The heater may be dry* – M028
Possible dry heater, or not enough water in the heater to start it. The spa is shut down for 15 min. Press any button to reset the heater start-up. See “Flow Related Checks” below.

The heater is dry* – M027
There is not enough water in the heater to start it. The spa is shut down. After the problem has been resolved, you must clear the message to restart heater start up. See “Flow Related Checks” below.

The heater is too hot* – M030
One of the water temp sensors has detected 118°f (47.8°C) in the heater and the spa is shut down. You must clear the message when water is below 108°f (42.2°C). See “Flow Related Checks” below.

Flow-Related Checks
Check for low water level, suction flow restrictions, closed valves, trapped air, too many closed jets and pump prime. On some systems, even when spa is shut down by an error condition, some equipment may occasionally turn on to continue monitoring temperature or if freeze protection is needed.

M0XX numbers are Message Codes.
*This message can be reset from the topside panel.

SENSOR RELATED MESSAGES

Sensors are out of sync – M015
The temperature sensors MAY be out of sync by 2°F or 3°F. Call for Service.

Sensors are out of sync -- Call for service* – M026
The temperature sensors ARE out of sync. The fault above has been established for at least 1 hour. Call for Service.

Sensor A Fault, Senor B Fault – Sensor A: M031, Sensor B: M032
A temperature sensor or sensor circuit has failed. Call for Service.

MISCELLANEOUS MESSAGES

Communications error
The control panel is not receiving communication from the System. Call for Service.

Test software installed
The Control System is operating with test software. Call for Service.

°F or °C is replaced by °T
The Control System is in Test Mode. Call for Service.

M0XX numbers are Message Codes.
*This message can be reset from the topside panel.

SYSTEM RELATED MESSAGES

Program memory failure* – M022
At Power-Up, the system has failed the Program Checksum Test. This indicates a problem with the firmware (operation program) and requires a service call.

The clock has failed* – M020
Contact your dealer or service organization.

Hot fault – M035
A Pump Appears to have been Stuck ON when spa was last powered.
POWER DOWN THE SPA. DO NOT ENTER THE WATER. Contact your dealer or service organization.

REMINDER MESSAGES

General maintenance helps
Reminder Messages can be suppressed by using the Preferences Menu. Reminder Messages can be chosen individually by the Manufacturer. They may be disabled entirely, or there may be a limited number of reminders on a specific model. The frequency of each reminder (i.e. 7 days) can be specified by the Manufacturer.

Check the pH
May appear on a regular schedule, i.e. every 7 days. Check pH with a test kit and adjust pH with the appropriate chemicals.

Check the sanitizer
May appear on a regular schedule, i.e. every 7 days. Check sanitizer level and other water chemistry with a test kit and adjust with the appropriate chemicals.

Clean the filter
May appear on a regular schedule, i.e. every 30 days. Clean the filter media as instructed by the manufacturer.

Test the GFCI (or RCD)
May appear on a regular schedule, i.e. every 30 days. The GFCI or RCD is an important safety device and must be tested on a regular basis to verify its reliability. Every user should be trained to safely test the GFCI or RCD associated with the hot tub installation. A GFCI or RCD will have a TEST and RESET button on it that allows a user to verify proper function.

Change the water
May appear on a regular schedule, i.e. every 90 days. Change the water in the spa on regular basis to maintain proper chemical balance and sanitary conditions.

Clean the cover
May appear on a regular schedule, i.e. every 180 days. Vinyl covers should be cleaned and conditioned for maximum life.

Treat the wood
May appear on a regular schedule, i.e. every 180 days. Wood skirting and furniture should be cleaned and conditioned per the manufacturers instructions for maximum life.

Change the filter
May appear on a regular schedule, i.e. every 365 days. Filters should be replaced occasionally to maintain proper spa function and sanitary conditions.

Reminder messages can be reset from the topside panel.
Additional messages may appear on specific systems.

Warning! Qualified Technician Required for Service and Installation

Basic Installation and Configuration Guidelines

Use minimum 6AWG copper conductors only.

Torque field connections between 21 and 23 in lbs.

Readily accessible disconnecting means to be provided at time of installation.

Permanently connected power supply.

Connect only to a circuit protected by a Class A Ground Fault Circuit Interrupter (GFCI) or Residual Current Device (RCD) mounted at least 5' (1.52M) from the inside walls of the spa/hot tub and in line of sight from the equipment compartment.

CSA enclosure: Type 2

Refer to Wiring Diagram inside the cover of the control enclosure.

Refer to Installation and Safety Instructions provided by the spa manufacturer.

Warning: People with infectious diseases should not use a spa or hot tub.

Warning: To avoid injury, exercise care when entering or exiting the spa or hot tub.

Warning: Do not use a spa or hot tub immediately following strenuous exercise.

Warning: Prolonged immersion in a spa or hot tub may be injurious to your health.

Warning: Maintain water chemistry in accordance with the Manufacturers instructions.

Warning: The equipment and controls shall be located not less than 1.5 meters horizontally from the spa or hot tub.

Warning! GFCI or RCD Protection.

The Owner should test and reset the GFCI or RCD on a regular basis to verify its function.

Warning! Shock Hazard! No User Serviceable Parts.

Do not attempt service of this control system. Contact your dealer or service organization for assistance. Follow all owner's manual power connection instructions. Installation must be performed by a licensed electrician and all grounding connections must be properly installed.

CSA Compliance/Conformité

Caution:

- Test the ground fault circuit interrupter before each use of the spa.
- Read the instruction manual.
- Adequate drainage must be provided if the equipment is to be installed in a pit.
- For use only within an enclosure rated CSA Enclosure 3.
- Connect only to a circuit protected by a Class A ground fault circuit interrupter or residual current device.
- To ensure continued protection against shock hazard, use only identical replacement parts when servicing.

- Install a suitably rated suction guard to match the maximum flow rate marked.

Warning:

- Water temperature in excess of 38°C may be injurious to your health.
- Disconnect the electrical power before servicing.

Attention:

- Toujours verifier l'efficacite du disjoncteur differentiel avant d'utiliser differentiel avant d'utiliser le bain.
- Lire la notice technique.
- Lorsque l'appareillage est installe dans une fosse, on doit assurer un drainage adequat.
- Employer uniquement a l'interieur d'une cloture CSA Enclosure 3.
- Connecter uniquement a un circuit protege par un disjoncteur differentiel de Class A.
- Afin d'assurer une protection permanente contre le danger de shock electrique, lors de l'entretien employer seulement des pieces de rechange identiques.

Avertissement:

- Des temperatures de l'eau superieures a 38°C peuvent presenter un danger pour la sante.
- Deconnecter du circuit d'alimentation electrique avante l'entretien.

Warning/Advertissement:

- Disconnect the electric power before servicing. Keep access door closed.
- Deconnecter du circuit d'alimentation electrique avant l'entretien. Garder la porte fermer.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 7030343, 7,417,834 b2, Canadian Patent: 2342614, Australian patent: 2373248 other patents both foreign and domestic applied for and pending. All material copyright of Balboa Water Group.

Piping instructions of PALERMO spa
30mA safety relay is need to be installed!

Dimensions: 2180 x 2180 x 910 mm

- L: Drain valve (300 mm)
- E: Electric terminal facilities through spa cabinet. 3 m cabels are required!

Palermo Basic und Standard:

- **Elektrische Bediengung: bis 10 Meter 1 x 25A 3 × 6mm^2 MTK Kabel ist erforderlich (230) (in diesem Fall - während der Nutzung des 2PS Pumpen - die Heizung funktioniert nicht)**
- **Im Falle Standard Mode: bis 10 Meter 2 x 16A 5 × 4mm^2 MTK Kabel erforderlich ist (in diesem Fall - während der Nutzung des 2PS Pumpen - die Heizung funktioniert)**

Palermo Deluxe:

- **Elektrische Bediengung: bis 10 Meter 1 x 25A 3 × 6mm^2 MTK Kabel ist erforderlich (230) (in diesem Fall - während der Nutzung des 3PS Pumpen - die Heizung funktioniert nicht)**
- **Im Falle Standard Mode: bis 10 Meter 3 x 16A 5 × 4mm^2 MTK Kabel erforderlich ist (in diesem Fall - während der Nutzung des 3PS Pumpen - die Heizung funktioniert)**

In case of sinking just allowed to sinking part which is under the spa`s acrylic-flange. You have to make safe the diversion of inlet water in the deepest point of the inspection pit. The inspection pit has to be aired accordingly (proposal: building in an extractor fan).
The inspection pit`s minimum width is 60 cm around the spa.
If the spa is placed indoor please make allowances for the following special requirements: The water accumulates around the spa so the socket cover has to be in possession of a suitable drainage. This arrangement hinders the water in collecting.

Given sizes above are only information, there may be variant sizes on the grounds of the spa`s manufacturing technique.

Palermo Start Spa system

GS100 Tech Sheet

Balboa Water Group
System PN 56300

System Model # MP7-GS100-DCA-3.0K
Software Version # 41
EPN # 3825

Base PCBA - PN 56301
PCB VS100C - PN 24084 Rev A

Base Panels
VL200 (Mini) – PN 55123
VL240 (MVP240) – PN 55080
VL260 (MVP260) – PN 55081
VL401 (LCD Lite Duplex) – PN 54665
VL403 (LED Lite Duplex) – PN 54664

Template used: 40743_A.pdf 02/08/2007
56300_97_B.pdf 06-18-13

BALBOA water group

Basic System Features and Functions

Power Requirements

- 230VAC, 1~, 16A minimum, 25A optimum, 50Hz
- 3 wires (line, neutral, ground)

System Outputs

Setup 1 (As Manufactured)

- 230V Pump 1, 2-Speed
- 230V Ozone
- 10V Spa Light
- 230V 3.0kW Heater
  PN 58202

Basic System Features and Functions

Any time you change a DIP Switch, other than A1, you must reset Persistent Memory for your new DIP Switch Settings changes to take effect. If you do not reset Persistent Memory, your system may function improperly.

To reset Persistent Memory:

- Power down by disconnecting power source from spa.
- Put a jumper across J43, covering both pins. (See illustration below)
- Power up by connecting power source to spa.
- Wait until "Pr" is displayed on your panel.
- Power down again.
- Remove jumper from J43 (May also move to cover 1 pin only)
- Power up again.

About Persistent Memory and Time of Day Retention:

This system uses memory that doesn't require a battery to store a variety of settings. What we refer to as Persistent Memory stores the filter settings, the set temperature, and the heat mode.

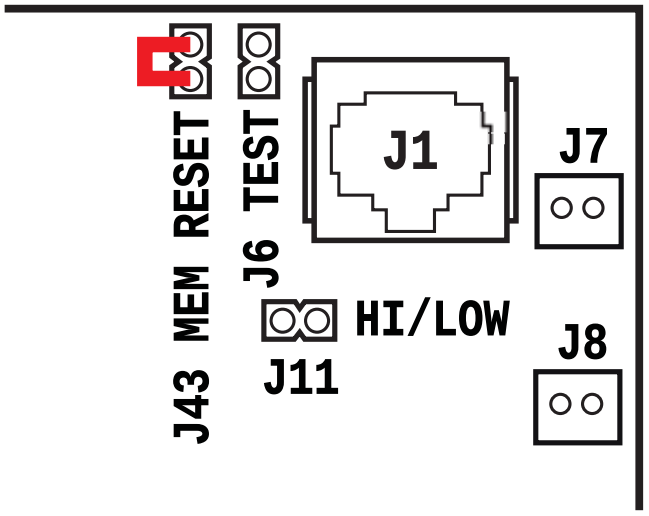
Persistent Memory is not used for Time of Day. Only models with a Serial Deluxe panel installed (VS5xxDZ and GS5xxDZ) can display the time. However, during power loss to the spa, the system will lose the correct time, and reset to 12:00 PM when power is restored.

Power Up Display Sequence

Upon power up, you should see the following on the display:

- Three numbers in a row, which are the SSID (the System Software ID). The third display of these numbers is the Software Version, which should match the version of your system. For example, if these three numbers are 100 67 38, that is a VS511SZ at version 38.
- Displayed next is: "24" (indicating the system is configured for a heater between 3 and 6 kW) or "12" (indicating the system is configured for a heater effectively* between 1 and 3 kW). "24" should appear for all VS models running at 240VAC. "12" should appear for all VS models running at 120VAC, as well as all GS models. (*A heater which is rated at 4 kW at 240VAC will function as a 1 kW heater at 120VAC.)
- "Pr" will appear to signal the start of Priming Mode.

At this point, the power up sequence is complete. Refer to the Reference Card for the VS or GS System model of your spa for information about how the spa operates from this point on, including how to adjust the Time of Day if using a Serial Deluxe style panel.



Setup 1 (As Manufactured)

- 230V Pump 1, 2-Speed
- 10V Spa Light
- 230V Ozone (with Pump 1 Low)
- 3.0kW @ 230VAC Heater
- VL260 Main Panel

BALBOA water group

GS100 **PN 56300**

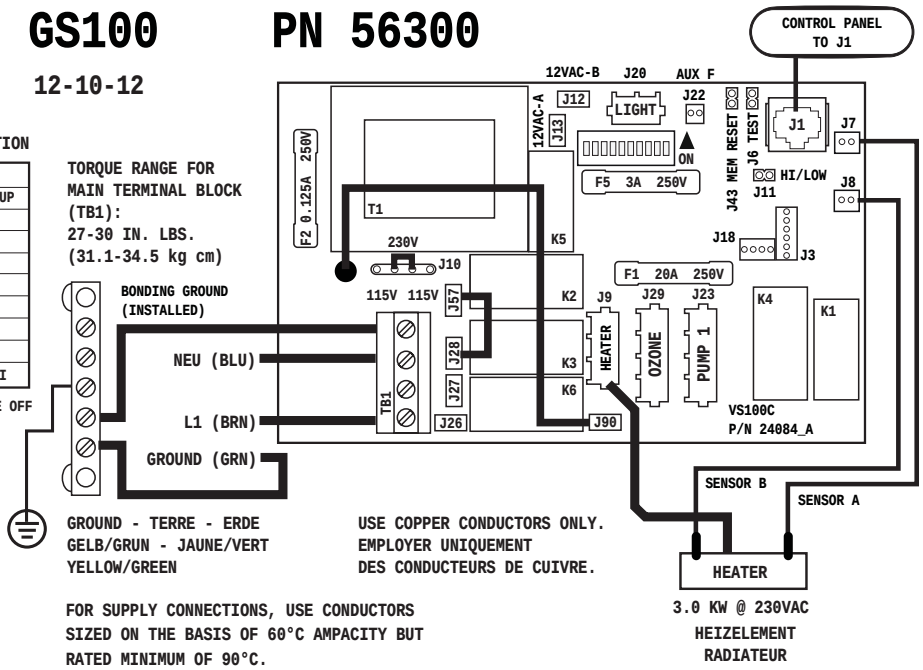
12-10-12

OFF POSITION	DIP SWITCH #	ON POSITION
TEST MODE OFF*	◀ 1	TEST MODE ON*
UNUSED, P1, TEMP, LIGHT	2 ▶	P1, LT, TEMP DOWN, TEMP UP
DUPLEX PANEL	◀ 3	MINI PANEL
N/A MUST BE OFF	◀ 4	N/A MUST BE OFF
SEE PUMP TABLE	◀ 5	SEE PUMP TABLE
60HZ OPERATION	6 ▶	50HZ OPERATION
STD, ECON, SLEEP ALLOWED	◀ 7	STANDARD MODE ONLY
DEGREES FAHRENHEIT	8 ▶	DEGREES CELSIUS
SEE PUMP TABLE	◀ 9	SEE PUMP TABLE
HIGH AMP - HEAT W/P1 HI	10 ▶	LOW AMP - NO HEAT W/P1 HI

*SWITCH 1 IS NORMALLY OFF

ALL UNUSED SWITCHES SHOULD BE OFF

PUMP TIMEOUTS TABLE			
SWITCH 5	SWITCH 9	LOW SPEED	HIGH SPEED
OFF	OFF	2 HOURS	15 MINUTES
ON	OFF	2 HOURS	30 MINUTES
OFF	ON	15 MINUTES	15 MINUTES
ON	ON	30 MINUTES	30 MINUTES



LOCATION	DEVICE
J23	NETZSTROMVERSORGUNG 2-GESCHW.-PUMPE 1 ALIMENTATION POMPE 1 A 2 VITESSES 2-SPEED PUMP 1
J29	OZONGENERATOR GENERATOROZONE OZONE GENERATOR
J20	BELEUCHTUNG ECLAIRAGE BAIN HYDRO SPA LIGHT

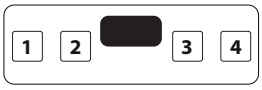
WARNING: Main Power to system should be turned OFF BEFORE adjusting DIP switches.
WARNING: Persistent Memory (J43) must be RESET to allow new DIP switch settings to take effect. (See Persistent Memory page)

, g p

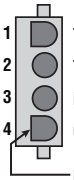
Panel Button Assignments

1=Pump 1 3=Temp Down
2=Light 4=Temp Up

Panel Button Positions



Board Connector Key



1 Typically Line voltage
2 Typically Line voltage for 2-speed pumps
3 Neutral (Common)
4 Ground

Note flat sides in connector

DIP Switches and Jumpers Definitions

SSID 100 59 41 Base Model VS100

DIP Switch Key

A1 Test Mode (normally OFF)
A2 "ON" position: Button layout will be: Pump 1, Light, Temp Down, Temp Up *
"OFF" position: Button layout will be: Unused, Pump 1, Temp, Light
A3 "ON" position: use Mini Panel *
"OFF" position: use Lite Duplex or Digital Duplex panel
A4 N/A (must be OFF)
A5 Pump 1 timeout, see Table 1
A6 "ON" position: 50Hz operation
"OFF" position: 60Hz operation
A7 "ON" position: Standard mode only
"OFF" position: Std/Ecn/Sleep mode changes allowed
A8 "ON" position: temperature is displayed in degrees Celsius
"OFF" position: temperature is displayed in degrees Fahrenheit
A9 Pump 1 timeout, see Table 1
A10 "ON" position: heater is disabled while the high-speed pump is running (low amperage mode)
"OFF" position: heater can run while the high-speed pump is running (high amperage mode)

Table 1 Pump 1 Timeouts

A5	A9	Low-spd	Hi-spd
OFF	OFF	2 hours	15 min
ON	OFF	2 hours	30 min
OFF	ON	15 min	15 min
ON	ON	30 min	30 min

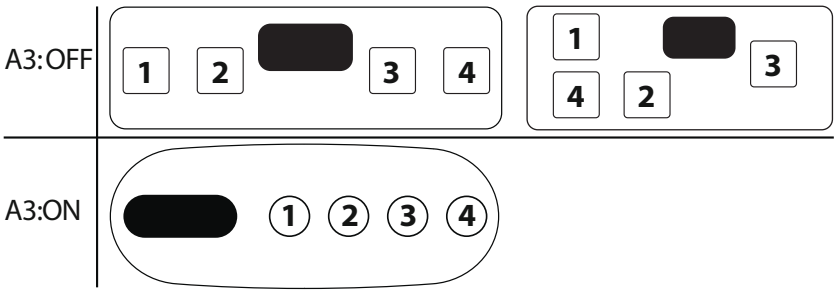
* Panels with button layout are not compatible when A2 or A3 is ON.
Note: No blower or second pump available.

Jumper Key

J43 When jumper is placed on 2 pins during power-up, system will reset persistent memory. Leave on 1 pin only to enable persistent memory feature.

WARNING:
- Setting DIP switches incorrectly may cause abnormal system behavior and/or damage to system components.
- Refer to Switchbank illustration on Wiring Configuration page for correct settings for this system.
- Contact Balboa if you require additional configuration pages added to this tech sheet.

Panel Button Positions



Panel Button Assignments

A2:OFF	**1=Unused**	**3=Temp**
	2=Pump 1	**4=Light**
A2:ON	**1=Pump 1**	**3=Temp Down**
	2=Light	**4=Temp Up**

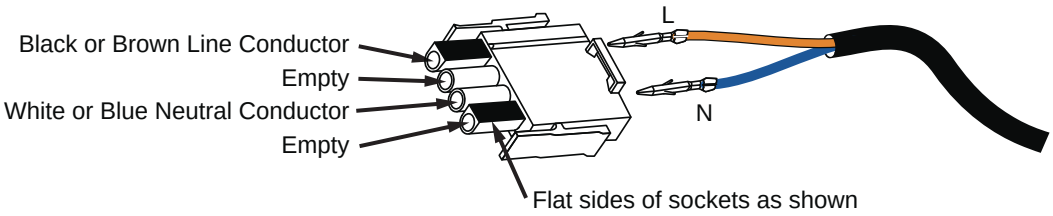
Ozone Connections

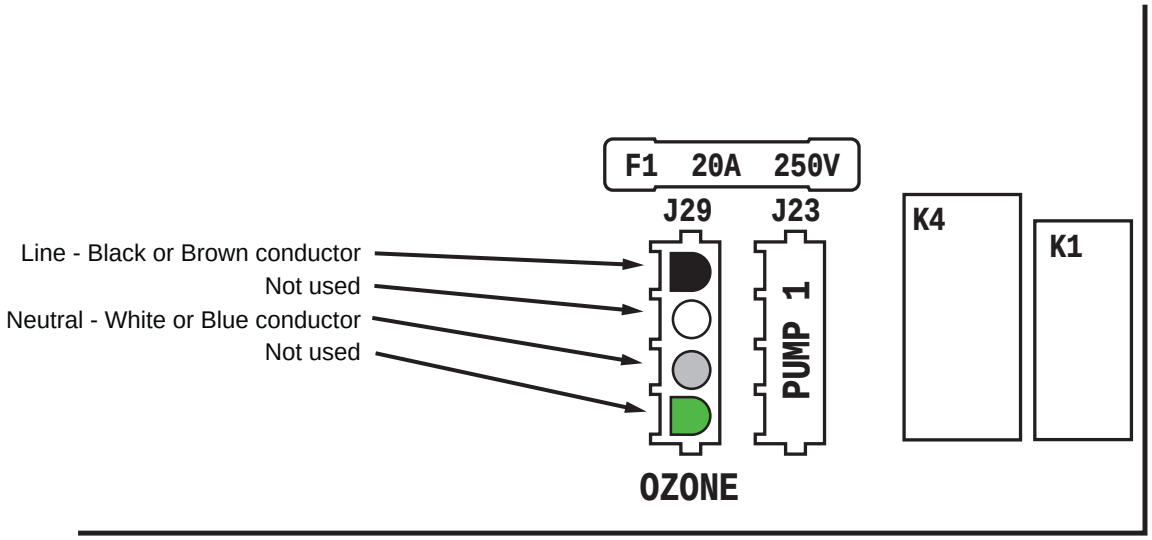
Ozone Connector Voltage: The VS100 circuit board is factory configured to deliver a preset voltage of 120V to the on-board ozone connector (J29).

Balboa Ozone Generator: The board is set up to operate a 120V ozone generator; the connector on the ozone generator is likely to be configured correctly, but should be compared to the illustration below.

Note: A special tool is required to remove the pins from the connector body once they are snapped in place. Check with your Balboa Account Manager for information on purchasing a pin-removal tool.

Balboa Ozone connector configuration for 230VAC 50Hz:



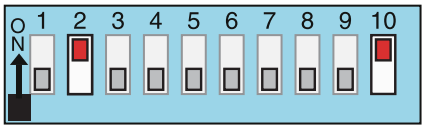


Duplex Panel Configurations

Setup (As Manufactured)

VL403 (Lite Digital)
PN 54664 with Overlay PN 11884
• Connects to Main Panel terminal J1

Switchbank



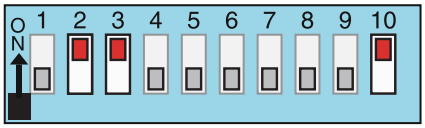
DIP switch A3 must be OFF

VL401 (Lite Digital)
PN 54665 with Overlay PN 11885
• Connects to Main Panel terminal J1

Optional Panels

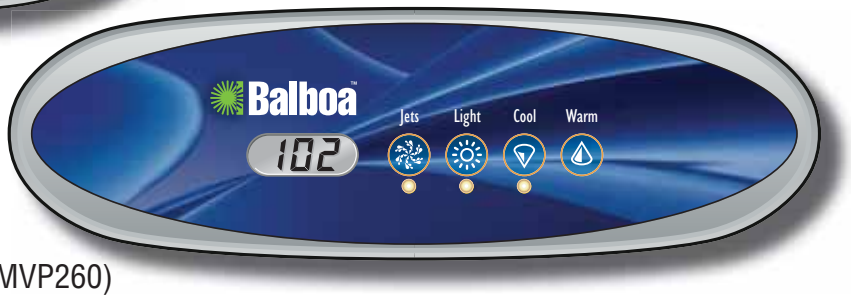
VL200 (Mini Panel)
PN 55123 with Overlay PN 11852
• Connects to Main Panel terminal J1

Switchbank



DIP switch A3 must be ON

VL240 (MVP240)
PN 55080 with Overlay PN 11745
• Connects to Main Panel terminal J1



VL260 (MVP260)
PN 55081 with Overlay PN 11746
• Connects to Main Panel terminal J1

GS500Z GS501Z GS520DZ WLG523DZ BP26P3BC
1 LINE (1 FÁZIS) 1x230V 1x16A BP2100G1
BP600

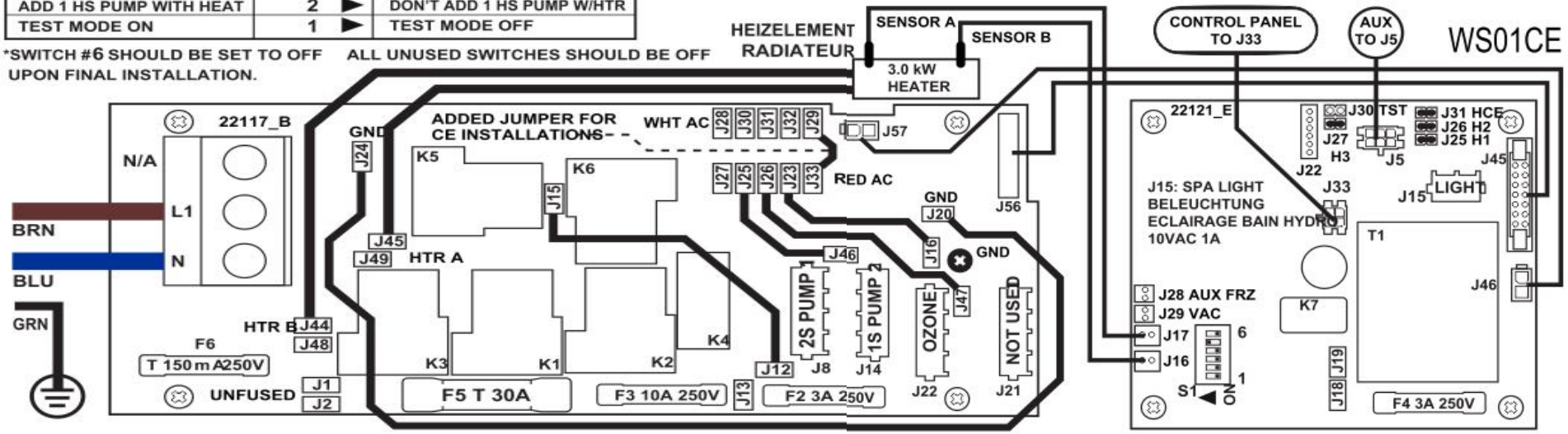
Alábbi medencékbe **1 LINE 16A** **1 LINE 32A**

- Manhattan Basic
- Ibiza
- Samoa
- Palermo Basic
- Palermo Standard
- Malaga Basic
- Challanger
- Dominika
- Cancun
- Westerbergs relax

ON POSITION	S1 SWITCH #	OFF POSITION
MEMORY RESET*	6 ►	STORE SETTINGS*
SPECIAL AMPERAGE RULE ON	◄ 5	SPECIAL AMPERAGE RULE OFF
ADD 4 HS PUMPS WITH HEAT	4 ►	DON'T ADD 4 HS PUMPS W/HTR
ADD 2 HS PUMPS WITH HEAT	3 ►	DON'T ADD 2 HS PUMPS W/HTR
ADD 1 HS PUMP WITH HEAT	2 ►	DON'T ADD 1 HS PUMP W/HTR
TEST MODE ON	1 ►	TEST MODE OFF

*SWITCH #6 SHOULD BE SET TO OFF UPON FINAL INSTALLATION.

ALL UNUSED SWITCHES SHOULD BE OFF



1 Phase (Line) Connection to
1x16A (minimum)
Advice to PALERMO Standard modell

BALBOA water group

GS500Z GS501Z GS520DZ WLG523DZ BP26P3BC
1 LINE (1 FÁZIS) 1x230V 1x32A BP2100G1
BP600

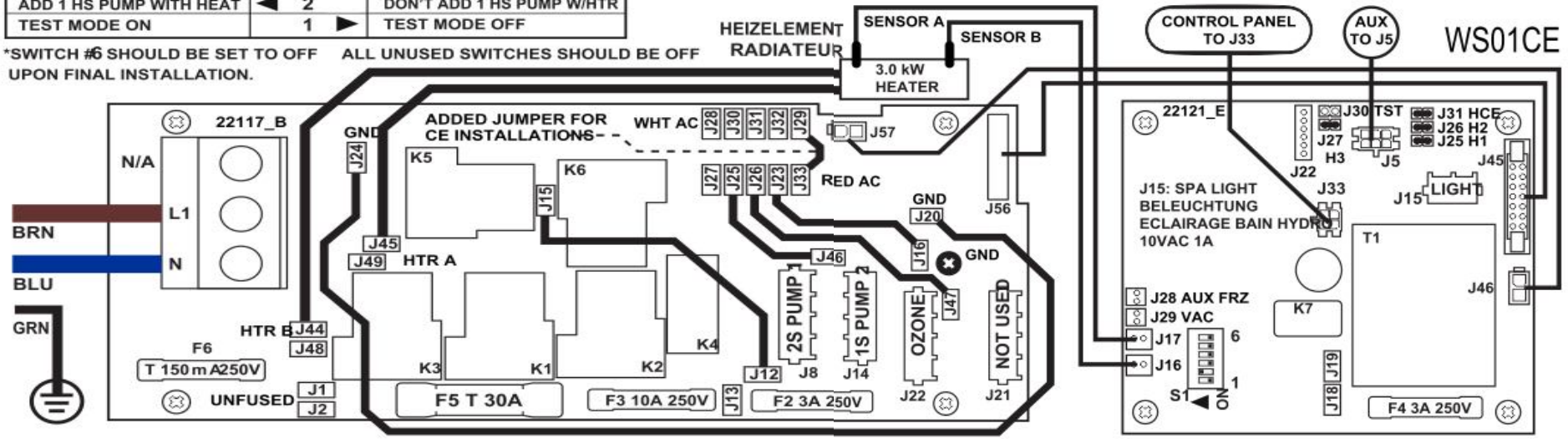
Alábbi medencékbe **1 LINE 16A** **1 LINE 32A**

- Manhattan Basic
- Ibiza
- Samoa
- Palermo Basic
- Palermo Standard
- Malaga Basic
- Challanger
- Dominika
- Cancun
- Westerbergs relax

ON POSITION	S1 SWITCH #	OFF POSITION
MEMORY RESET*	6 ►	STORE SETTINGS*
SPECIAL AMPERAGE RULE ON	5 ►	SPECIAL AMPERAGE RULE OFF
ADD 4 HS PUMPS WITH HEAT	4 ►	DON'T ADD 4 HS PUMPS W/HTR
ADD 2 HS PUMPS WITH HEAT	3 ►	DON'T ADD 2 HS PUMPS W/HTR
ADD 1 HS PUMP WITH HEAT	◄ 2	DON'T ADD 1 HS PUMP W/HTR
TEST MODE ON	1 ►	TEST MODE OFF

*SWITCH #6 SHOULD BE SET TO OFF UPON FINAL INSTALLATION.

ALL UNUSED SWITCHES SHOULD BE OFF



1 Phase (Line) Connection to
1x25A (optimum)
Advice to PALERMO Standard modell

BALBOA water group

GS500Z GS501Z GS520DZ WLG523DZ BP26P3BC

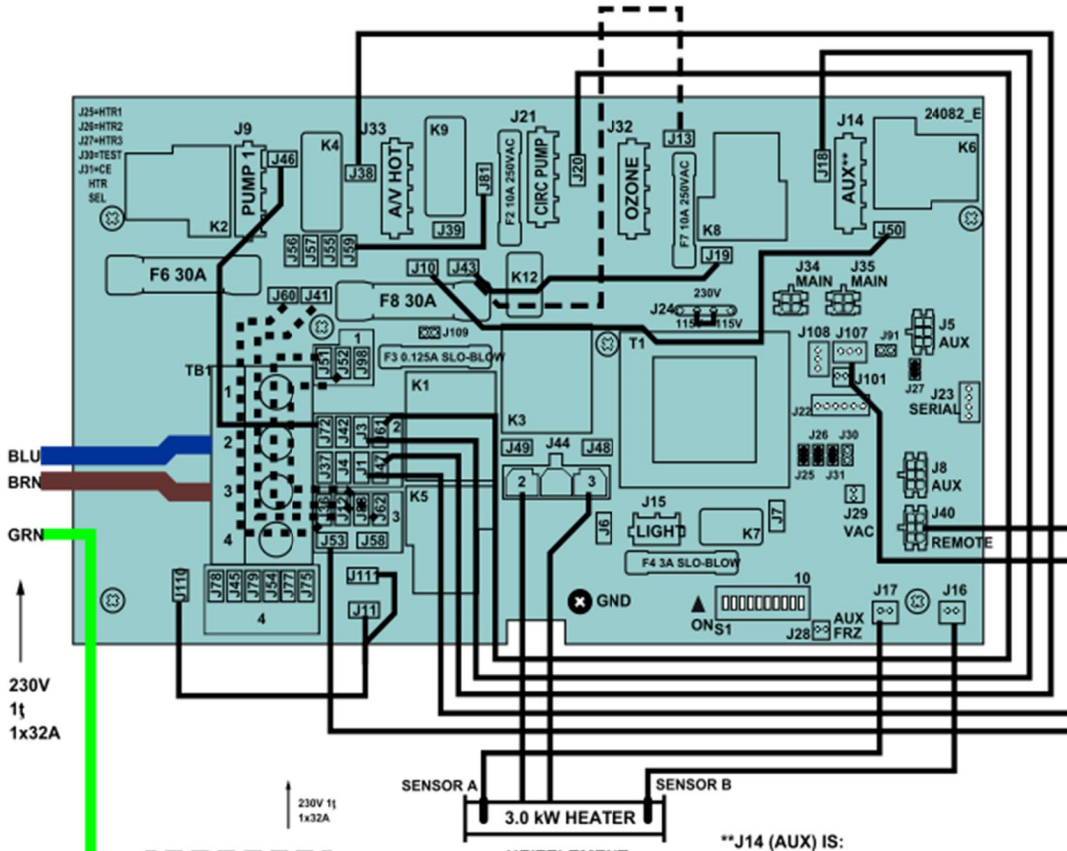
1 LINE (1 FÁZIS) 1x230V 1x32A BP2100G1

BP600

Alábbi medencékbe 1 LINE 3 LINE

Manhattan Deluxe	Robinzon
Zonza	Everest
Palermo Deluxe	Everest Deluxe
Borneo	Acapulco
Greenland	Acapulco mobil
Malaga	Santana
Bahama	Grenada
Bahama Deluxe	Westerbergs luxury
	Westerbergs deluxe

J43 TO J13 (BLOWER ON J14)
IN SETUPS 3, 5, 9, 11, 12, 17, 18



BLU
BRN
GRN

230V
1ţ
1x32A

SENSOR A
SENSOR B
3.0 kW HEATER
HEIZELEMENT
RADIATEUR

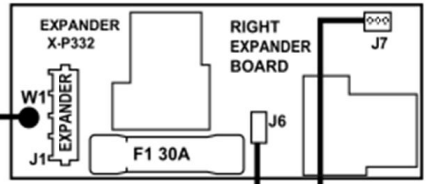
IR RECEIVER
OR
RF RECEIVER

WIFI
TRANSCEIVER
J34 OR J35

TP (MAIN) PANELS
J34 OR J35

AUX
J5 (A1-A4)
OR
J8 (A5-A8)

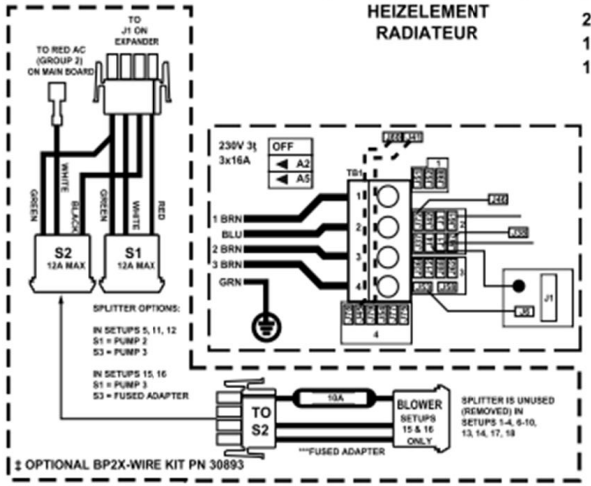
LOCATION	DEVICE	VOLTS	AMPS	FROM	TO	FROM	TO
J1 ON RT EXPANDER	2 SPD* PUMP 3	230V	12A MAX	W1 ON EXPANDER	GROUP 2 J1	J6 ON EXPANDER	GROUP 3 J53



NETZSTROMVERSORGUNG
2-GESCHW.-PUMPE 3*
ALIMENTATION POMPE 3
A 2 VITESSES*

*EXPANDER BOARD IS:
2-SPEED PUMP 3 IN SETUPS 1, 7
1-SPEED PUMP 3 (ONLY) IN SETUPS 2, 6, 8, 13, 14
1-SPEED PUMP 3 AND 1-SPEED BLOWER (WITH SPLITTER & IN-LINE FUSE) IN SETUPS 15, 16
1-SPEED PUMP 2 AND 1-SPEED PUMP 3 IN SETUPS 5, 11, 12
2-SPEED PUMP 2 IN SETUPS 3, 9
1-SPEED PUMP 2 IN SETUP 17, 18
UNUSED IN SETUPS 4, 10

**J14 (AUX) IS:
2-SPEED PUMP 2 IN SETUPS 2-4, 7-10, 15, 16
1-SPEED PUMP 2 IN SETUPS 5, 6, 11–14
1-SPEED BLOWER IN SETUPS 3, 5, 9, 11, 12, 17, 18



‡ OPTIONAL BP2X-WIRE KIT PN 30893

230V 1ţ
1x32A

SWITCHBANK S1 OFF		SWITCHBANK S1 ON
TEST MODE OFF	◀ A1	TEST MODE ON
DON'T ADD 1 HS PUMP W/HTR	◀ A2	ADD 1 HS PUMP WITH HEAT
DON'T ADD 2 HS PUMPS W/HTR	◀ A3	ADD 2 HS PUMPS WITH HEAT
DON'T ADD 4 HS PUMPS W/HTR	◀ A4	ADD 4 HS PUMPS WITH HEAT
SPECIAL AMPERAGE RULE A*	A5 ▶	SPECIAL AMPERAGE RULE B*
STORE SETTINGS**	◀ A6	MEMORY RESET**
NOT ASSIGNED	◀ A7	NOT ASSIGNED
NOT ASSIGNED	◀ A8	NOT ASSIGNED
NOT ASSIGNED	◀ A9	NOT ASSIGNED
NOT ASSIGNED	◀ A10	NOT ASSIGNED

**SWITCH #6 SHOULD BE SET TO OFF UPON FINAL INSTALLATION.

1 Phase (Line) Connection to 1x32A (minimum)
Advice to PALERMO Deluxe modell

GS500Z GS501Z GS520DZ WLG523DZ BP26P3BC

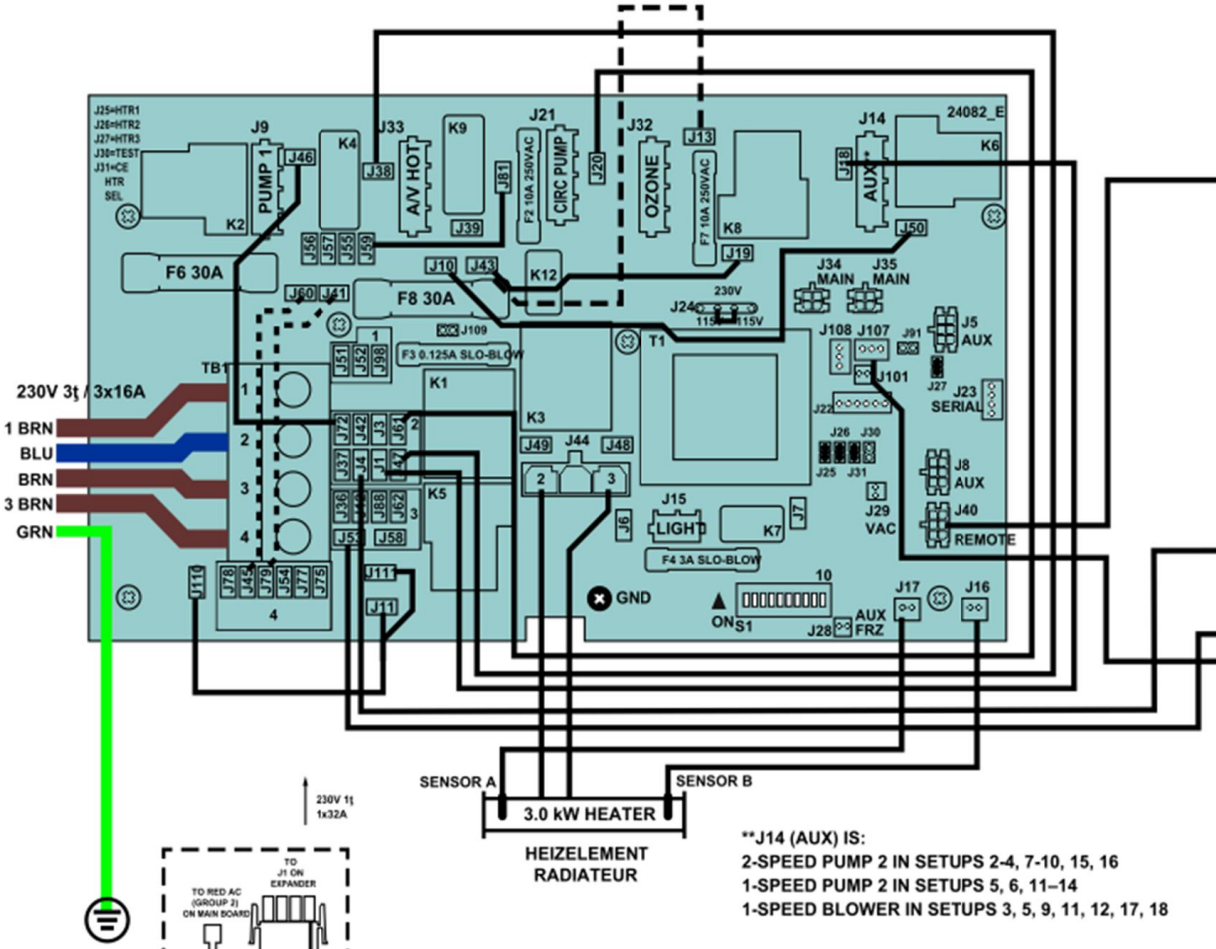
3 LINE (1 FÁZIS) 3x230V 3x16A BP2100G1

BP600

Alábbi medencékbe 1 LINE **3 LINE**

Manhattan Deluxe	Robinzon
Zonza	Everest
Palermo Deluxe	Everest Deluxe
Borneo	Acapulco
Greenland	Acapulco mobil
Malaga	Santana
Bahama	Grenada
Bahama Deluxe	Westerbergs luxury
	Westerbergs deluxe

J43 TO J13 (BLOWER ON J14)
IN SETUPS 3, 5, 9, 11, 12, 17, 18



230V 3ţ / 3x16A
1 BRN
BLU
BRN
3 BRN
GRN

SENSOR A — SENSOR B

3.0 kW HEATER

HEIZELEMENT
RADIATEUR

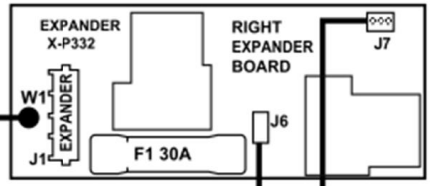
IR RECEIVER
OR
RF RECEIVER

WIFI
TRANSCEIVER
J34 OR J35

TP (MAIN) PANELS
J34 OR J35

AUX J5 (A1-A4) OR J8 (A5-A8)

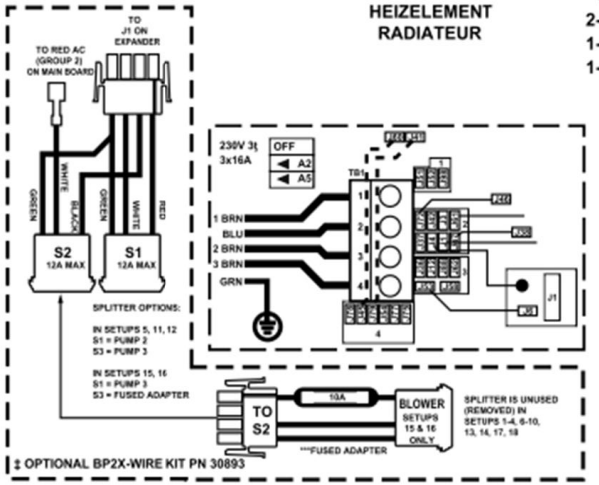
LOCATION	DEVICE	VOLTS	AMPS	FROM	TO	FROM	TO
J1 ON RT EXPANDER	2 SPD* PUMP 3	230V	12A MAX	W1 ON EXPANDER	GROUP 2 J1	J6 ON EXPANDER	GROUP 3 J53



NETZSTROMVERSORGUNG
2-GESCHW.-PUMPE 3*
ALIMENTATION POMPE 3
A 2 VITESSES*

*EXPANDER BOARD IS:
2-SPEED PUMP 3 IN SETUPS 1, 7
1-SPEED PUMP 3 (ONLY) IN SETUPS 2, 6, 8, 13, 14
1-SPEED PUMP 3 AND 1-SPEED BLOWER (WITH SPLITTER & IN-LINE FUSE) IN SETUPS 15, 16
1-SPEED PUMP 2 AND 1-SPEED PUMP 3 IN SETUPS 5, 11, 12
2-SPEED PUMP 2 IN SETUPS 3, 9
1-SPEED PUMP 2 IN SETUP 17, 18
UNUSED IN SETUPS 4, 10

**J14 (AUX) IS:
2-SPEED PUMP 2 IN SETUPS 2-4, 7-10, 15, 16
1-SPEED PUMP 2 IN SETUPS 5, 6, 11–14
1-SPEED BLOWER IN SETUPS 3, 5, 9, 11, 12, 17, 18



230V 3ţ
3x16A

SWITCHBANK S1 OFF		SWITCHBANK S1 ON
TEST MODE OFF	A1	TEST MODE ON
DON'T ADD 1 HS PUMP W/HTR	A2	ADD 1 HS PUMP WITH HEAT
DON'T ADD 2 HS PUMPS W/HTR	A3	ADD 2 HS PUMPS WITH HEAT
DON'T ADD 4 HS PUMPS W/HTR	A4	ADD 4 HS PUMPS WITH HEAT
SPECIAL AMPERAGE RULE A*	A5	SPECIAL AMPERAGE RULE B*
STORE SETTINGS**	A6	MEMORY RESET**
NOT ASSIGNED	A7	NOT ASSIGNED
NOT ASSIGNED	A8	NOT ASSIGNED
NOT ASSIGNED	A9	NOT ASSIGNED
NOT ASSIGNED	A10	NOT ASSIGNED

**SWITCH #6 SHOULD BE SET TO OFF UPON FINAL INSTALLATION.

3 Phase (Line) Connection to 3x16A (optimum)
Advice to PALERMODeluxe modell